THE MARINE RECORD

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MARINE RECORD Life Savers' Series.

CAPT. NELSON CRAITE.

The keeper in charge of the Kewaunee Life-Saving Station is one of the most advanced men of the service, He is experienced in lake navigation, and lets slip no opportunity of keeping abreast of the times. Capt. Nelson Craite was born at Manitowoc Rapids, Wis., Dec. 5, 1853, and was the eldest of a family of ten children, all of whom, save one, are still living. Young Craite seized all available opportunities of getting an education. He attended school until he was eighteen years of age, after which he taught for one term. He worked for five winters in the great Wisconsin timber district remaining at home during the summer months.

He entered the life-saving service in the spring of 1885, enlisting as a surfman at Two Rivers, Wis., under the late Capt. Oliver Pilon. During his service at this station he acted as Capt. Pilon's secretary and bookkeeper and during his serious illness and up to the time of the appointment of Capt. Joseph Dionue, acted as keeper. In October, 1893, he was promoted to the rank of captain, and placed in charge of the Kewaunee station. His promotion was given solely on his merits, and in recognition of his high abilities and great executive capacity. Capt. Craite is by religion a Roman Catholic. and is a prominent member of the Catholic Knights of Wisconsin, and of St. Peter's society.

TO EXPLORE THE MAGNETIC POLE.

One of the most interesting points of Arctic exploration, from a scientific point of view, and one to which comparatively little attention seems to have been paid in recent years, is connected with the Magnetic Pole. The locaton of the North Magnetic Pole is an entirely different matter from the pole at the northermost point of the earth where all our meridians of longitude converge, and fortunately it is not so difficult of access. The point was passed over by the expedition of Sir James Clark Rose in 1840-43, when it was found to be rather more than a thousand miles south of the North Pole proper and in about 70° 5′ north latitude and 96° 40′ west longitude. This is somewhat near Franklin's Bay and an expedition in 1844, by Captains Moore and Clark, approximately determined it. Why it is that the compass needle should point to this spot instead of directly to the pole proper is one of those things that the scientists do hot seem to have positively agreed about, but which the recent great discoveries in electricity may possibly throw some light upon. It is stated that Prof. George Davidson, of San Francisco, is now planning a new expedition to investigate the matter.

A FLOATING LIFE-SAVING STATION.

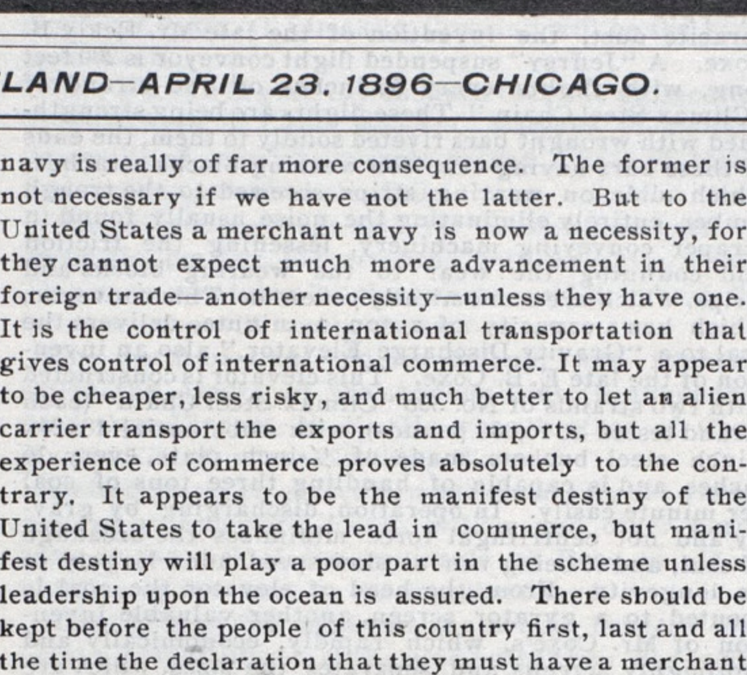
A novelty in life-saving station construction has been planned by the officers of that branch of the Treasury department. It is a floating station, to be placed at City Point, Boston Harbor, Mass. The boat, for so this new station may properly be classed, will be 100 feet long, 33 feet wide, and 4 feet, 2 inches deep at bilge from top of floor timbers to underside of deck beams. There will be three keels and five keelsons, all of Georgia pine. The bilge keelsons will extend the entire length of the hull. There will be a deckhouse with sleeping accommodations, kitchen, and cabin. A fresh-water tank, built of quarter-inch iron, will be placed in the hold below the kitchen. This tank will have a capacity of 700 gallons. The Treasury Department is now soliciting bids for the work.

NEED OF A MERCHANT NAVY.

The upbuilding of a war navy is absolutely necessary for this country. But the upbuilding of a merchant navy is really of far more consequence. The former is not necessary if we have not the latter. But to the United States a merchant navy is now a necessity, for they cannot expect much more advancement in their foreign trade—another necessity—unless they have one. It is the control of international transportation that gives control of international commerce. It may appear to be cheaper, less risky, and much better to let an alien carrier transport the exports and imports, but all the experience of commerce proves absolutely to the contrary. It appears to be the manifest destiny of the United States to take the lead in commerce, but manifest destiny will play a poor part in the scheme unless leadership upon the ocean is assured. There should be kept before the people of this country first, last and all the time the declaration that they must have a merchant navy. And they can have one if they so will it.—New York Maritime Register.

TRANS-OCEANIC TOWAGE.

An ocean tank barge is to be tested by the Standard Oil Company in a trip across the Atlantic, says Engineering News. Two similar barges have been towed



CAPT. NELSON CRAITE.

between Atlantic ports for several years with encouraging financial success. The company now proposes to tow its barge No. 58 to Liverpool, or some other English port. No 58 is a steel tank barge, with four masts, schooner rigged, as the sails are sometimes need to assist the towing steamer. The barge is 250 feet long by 40 ft. beam and draws 16½ ft. of water. The oil is carried in 12 separate tanks, each holding about 1,250 barrels, or an aggregate of 750,000 gallons. The English tank steamship Lackawanna, owned by the English branch of the Standard Oil Company, will probably do the towing, and carry in her own tanks 800,000 gallons of oil besides. The barge is fitted with steam towing machinery, steam steering gear, windlass and hoister. Vessels have already been towed from New York to the West Indies, and a floating dry-dock was towed, some years ago, from England to Bermuda.

LIFE-SAVINQ CREWS FOR 1896.

Life-saving crews for the season of 1896 have been enlisted as follows for the stations named:

Station No, 9, Vermillion Point—Capt. S. F. Bernier, keeper; Adolph LeFord, Alex Barclay, Wm. LaLonde, John McClinchey, Walter Cleary, Fred Pease and E. S. Wacktor.

Station No. 10, Crisp's Point—Capt. R. M. Small, keeper; James McGraw, John Stewart, W. S. M. Cook, Louis Paccaloni, John Webster, Andrew Bruce and John Keating.

Station No. 11, Two Heart River—Capt. Thos. H. McCormick, keeper; James Kay, Gregory Duschene, Robt. McKenzie, Ross Davis, Edward Miller, Edward McNally and Edward Gill.

Station No. 12, Deer Park—Capt. J. H. Frahm, keeper; John Shelson, Chas. Duffy, M. Patterson, Frank P. Lytle, Fred S. Small, Edward Verburg and David McVicar.

The volunteer crew of the Sackett's Harbor station (N. Y.) is under command of Capt. Fred. E. Gowing, First Lieut. Clark M. Stearns, Second Lieut. E. A. Hovey, and Third Lieut. P. W. Koppenhover, with Hartley Smith, Charles S. Bratton, J. M. Fitzgerald, C. E. Hicks, E. L. M. Clark, E. L. Powell, George M. Maxon, C. W. Potter, W. R. Bagby, Giles L. Marsh, Jr. Emmett Brooks and Charles Patrick as privates.

Thirty-five boats are enlisted in the volunteer lifesaving service at Cape Vincent, N. Y. Capt. John Peo, First Lieut. A. Horn, Second Lieut. Wayne B. Brewster and Third Lieut. John Flake command the following members of the crew: Forsythe Ingalls, George Downey, Anthony Seymour, John Fields, John Phillips, Joseph Strong, James Stanley, Leon Peo, Winfield Brewster, Benjamin Dodge, George McDonald, William Ross, Stanley Augustus, and Charles Roats.

Lieut. Commander E. H. Leutz has been detached from the Washington navy yard and ordered to command the Michigan, relieving Lieut-Commander B. S. Richards, ordered home on one month's leave.

VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD by George F. Stone, Secretary Chicago Board of Trade, April 18, 1896:

CITIES WHERE STORED.	WHEAT. Bushels.	CORN Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Albany	.....	20,000	50,000	.....	.....
Baltimore	89,000	615 000	219,000	61,000	.....
Boston	86 000	37 000	98 000	.....	.....
Buffalo	872,000	.....	25,000	149,000	114,000
" afloat	.....	.....	.....	.....	.....
Chicago	16 474 000	5 942,000	1,937.000	447,000	22,000
" afloat	480,000	2,507,000	467,000	25 000	.....
Cincinnati	10,000	2 000	21,000	1,000	34 000
Detroit	227,000	13,000	4.000	13,000	3,000
" afloat	.....	.....	.....	.....	.....
Duluth and Superior	14,547,000	145,000	1.189 000	225 000	498,000
" " afloat	512 000	.....	.....	.....	.....
Indianapolis	104.000	7.000	.....	.....	.....
Kansas City	1.157,000	176,000	61,000	28.000	.....
Milwaukee	397.000	.....	17,000	277 000	33,000
" afloat	53,000	.....	.....	.....	.....
Minneapolis	18 906 000	41 000	732 000	118 000	173,000
Montreal	922.000	75,000	434,000	6 000	63,000
New York	468,000	48 000	1 488,000	14,000	7.000
" afloat	8.000	.....	.....	.....	.....
Oswego	.....	.....	.....	.....	25,000
Peoria	11.000	17.000	252.000	2 000	.....
Philadelphia	104,000	60,000	158.000	.....	.....
St. Louis	1,137.000	594 000	462,000	3 000	.....
" afloat	24,000	106,000	.....	.....	.....
Toledo	527,000	580,000	67,000	124,000	.....
" afloat	.....	.....	.....	.....	.....
Toronto	29,000	22,000	103.000	.....	48,000
On Canal	.....	8 000	12 000	.....	.....
On Lakes	1,329,000	5,452,000	1,677.000	25,000	17,000
On Mississippi	.....	703,000	8 000	.....	.....
Grand Total	58.483 000	17.170,000	9.481,000	1,518 000	1,037,000
Corresponding date 1895	68,626,000	11,539 000	6,242 000	167,000	511,000

NEWS AROUND THE LAKES.

CLEVELAND.

SAD DEATH BY DROWNING OF CAPT. WILLIAM COWIN—SPRING CHANGES.

CLEVELAND, April 23.

The news of Capt. William Cowin's sudden death by drowning at South Chicago last Friday night was a great shock to all of his many friends at this port, where he has lived for a score of years. Capt. Cowen was climbing aboard his steamer, John Mitchell, when the ladder slipped, precipitating him into the water. The remains were brought to this port, and the funeral services were held at his family home, No. 244 Waverly avenue.

Capt. Cowin was born on the Isle of Man 49 years ago, and as a matter of course, went to sea when a mere boy. At the age of nineteen he was master of one of the largest sailing vessels which trades between Douglass and Liverpool. While yet a young man he came to America, and settled in Toledo, afterward coming to Cleveland. He first sailed the schooners Ed Kelley, and D. K. Clint, after which he was successively in command of the steamers D. W. Rust, George Spencer and John Mitchell, having sailed the last named for four seasons. He was known as one of the most successful and advanced of lake masters. He was a member of Cleveland Branch No. 4. Ship Masters' Association, Erie Lodge, I. O. O. F., Royal Arcanum, and the Foresters. He lost his wife about four years ago. Three daughters and two sons survive him.

Capt. F. D. Galton has been assigned to the wooden steamer W. H. Gratwick, and Capt. Richard Jackson will sail the John Mitchell vice the late Capt. Cowin.

The Cleveland Dredge Co.'s big dredge is at Ashtabula, trimming the ends off the P. Y. & A. docks at the end of the slip, so that the big ships trading there this season may be winded.

A riot occurred on the docks Wednesday atternoon when non-union lumber shovers attempted to unload the schooner John Wesley. It was quelled by the police, and a number of the union men were arrested. One or two non-union men were badly hurt, and one of the rioters, named Miller, had to be severely clubbed by an officer before he could be arrested. The policeman bravely hung to his prisoner during an attempt to rescue him, keeping the crowd at bay with his revolver. Several others were badly hurt. The J. B. Kitchen and other boats are being unloaded by union men.

Henry C. Barter, national secretary of the 'longshoremen's union, came down from Detroit a few days ago for the purpose of organizing the freight handlers, about 1,000 in number, into a union. He was an onlooker at Wednesday's riot on the docks.

The C. & B. liner State of Ohio started out on her first trip to Buffalo Wednesday night, but a hitch in her machinery necessitated her return to port. She will probably make the trip this eveuing.

The City of Cleveland is now running between Cleveland and Detroit. Capt. Archie McLachlan is in charge.

There is now a hitch between the city and the Lake Shore and Erie railway companies and the Lake Erie Iron Works, the dispute relating to the ownership of certain land on Whisky Island. The city wants to erect a $140,000 bridge to replace the wooden Willow street structure; but as almost the sole occupants of the island are obstinate, the present bridge may be taken down and the channel left with no bridge at all. This threat ought to bring the obstructionists to time, as the bridge is an absolute necessity to them.

Capt. C. E. Benham has removed his vessel agency from room 613 to 609 Perry-Payne building.

Mr. Walter Miller, consulting engineer, has opened offices on the third floor of the Western Reserve building.

CHICAGO.

PARTICULARS CONCERNING THE DEATH OF CAPT. W. H. COWIN—FREIGHTS AND OTHER NEWS.

OFFICE OF THE MARINE RECORD.
CHICAGO, April 21.

Capt. William H. Cowin, master of the steamer John Mitchell was accidentally drowned last Friday night at South Chicago. He was going on board the Mitchell, which was laying outside the schooner San Diego, at Beck's lumber yard, when he fell off the ladder, which he was ascending, between the two vessels, striking his head against the side of the steamer before he fell into the river. His body was found early Saturday morning and taken to the morgue at South Chicago. An inquest was held Saturday afternoon and a verdict of accidental drowning was returned. The deceased captain's remains were sent to his late home at 244 Waverley avenue, Cleveland, O., Saturday night. He leaves three daughters and two sons, the youngest being 13 years of age. Captain Cowin was well-known as a skillful and careful navigator and was held in high repute by a host of friends who deeply deplore his sad death and feel much sympathy for his children in their sad loss of a good, kind, indulgent father.

When completed, the Coxe Bros. Co.'s plant in Chicago will be one of the best equipped coal-handling docks. The intended coal storage pockets will cover an area of 180x200 feet, and be built in a most substantial manner. The loading pocket which shown in our view is 60 by 40 feet in size, and 54 feet in height, and built for durability and long service. The machinery, which is now partially erected and will be completed during this season, is one of the most modern and efficient design. It will consist of a hoist for unloading vessels, a wire rope haulage system for hauling railroad cars in and out of the yard, and a complete elevating and conveying system for transferring the coal from the storage pockets to the loading pocket for distribution to their wholesale and retail customers. The portion of the machinery now in place is a complete steam plant, consisting of a large engine and a battery of boilers equipped with a novel automatic stoker for burning anthracite dust, the invention of the late Mr. Eckly B. Coxe. A "Jeffrey" suspended flight conveyor is 200 feet long, with flights every 36 inches on one strand of "Climax Steel Chain." These flights are being strengthened with wrought bars riveted solidly to them, the ends of these bars having cast iron wearing blocks attached, which slide on wearing strips screwed to the trough timber, entirely eliminating the noise usually found in scraper conveying machinery, lessening the friction and confining the wear to the wearing blocks and strips, which are economically renewed. This conveyor, which has a capacity of a ton a minute, delivers the coal to a "Gravity Discharge Elevator," also an invention of the late E. B. Coxe. This elevator is constructed with two strands of No. 308 "Climax Steel Chain" (each strand tested at 16,000 pounds), with substantial 18x24x7-inch steel buckets, made of ¼-inch plate, every 16 inches, and is capable of handling three tons of coal per minute easily. In operation, discharging by gravity and not centrifugal force minimizes the breakage of coal, and it being run at slow speed adds largely to its longevity. From the head of elevator the coal is spouted to a gyrator screen, another valuable invention of Mr. Coxe's, which rapidly, economically and thoroughly screens and separates the sizes, which are then spouted to their respective bins for shipment. When the system is completed there will be five longitudinal conveyors similar to the one now in use in the main storage shed, and a cross conveyor of sufficient capacity to handle the output of two or three of these longitudinal conveyors, their independent operation being controlled by friction clutches. The conveying and elevating machinery was furnished by the Jeffrey Manufacturing Co., Columbus, O., and is of the very best quality in every particular. Special attention is called to the "Climax Steel Chain" used throughout the plant, its strength and durability being evident by the most casual examination. In fact, the whole plant, when carefully considered, will be found to be pleasing in design, perfect in finish, ample in strength and durability and efficient in operation.

Capt. H. H. Townsend, master of the steamer Edward Smith No. 2, took command of the steamer John Mitchell and left South Chicago with her Saturday evening for Buffalo.

Lumber and cedar freights are offering a trifle more freely. The present rates are nine shillings from Menominee and Manistee on lumber, and 5½c and 6c on cedar ties from Green Bay and the foot of Lake Michigan.

The steamer Colin Campbell collided with the schooner Surprise, lying at her dock at Clybourne avenue bridge on Friday morning. The schooner had her jibboom and head gear carried away.

The steamer P. J. Ralph and consort Harold were chartered for wheat to Detroit at 1¾c. C. W. Elphicke & Co. chartered the steel schooner Martha for 165,000 bushels of corn to Erie at 1¾c. She loaded at Bartlett & Frazer's elevator at South Chicago. Her cargo of corn was the largest ever taken out of that port.

Capt. John Prindiville chartered the schooner Emily B. Maxwell for corn to Walkerville, Ont., Canada, at 2c per bushel.

The Dunham Tug Co. towed the steamers Thos. W. Palmer and Brazil to Armour's A elevator; the steamer J. C. Gilchrist to the Danville and Indiana elevators.

The office of Dr. John B. Hamilton, of the United States Marine Hospital, has been removed from the United States Building to Suite 319 Rand-NcNally Building, No. 174 Adams street.

The Dunham Tug Co.'s tug T. T. Morford went into commission on Thursday last. She is a noble looking and better tug than when she was first built. It is asserted that she is the most powerful tug in this port.

A very large number of the grain laden fleet have left here for lower lake ports. WILLIAMS

BUFFALO.

CAUGHT NAPPING BY THE OPENING OF NAVIGATION—COAL SHIPPING RATHER DULL.

Special Correspondence to The Marine Record.

BUFFALO, April 21.

If there was any further evidence needed to prove that there is not the least use of trying to predict the time of the opening of navigation the arrival of the steamer Davidson at dark on Sunday evening ought to furnish it. There was a company of lake captains and others sitting in one of the harbor tug offices just before night that day. They were speculating over the probable arrival of the first boat. Some thought that something would get in next day, but one captain, who was himself under orders to leave as soon as possible, declared that he had made a bet that it would be late in the week at the best before he would get out. Just then someone came in and announced that there was a steamer blowing four whistles over to the southward. Everybody declared the thing impossible, but it proved correct and soon the tugs were off after the steamer Davidson.

James Kennedy, general contractor for the Lake Carriers' association for the handling of grain at this port, has made the following apppointments of general foremen at the various elevators: Erie, Edward Sheehan; Niagara A. & B. John Haley; Wheeler, Daniel Delahunt; Coatsworth & Kellogg, William H. McDonald; City A. & B., Ald. J. J. Kennedy; Dakota & Sturges, Timothy Desmond; Frontier & Marine, Simon McMahon; Eastern, William Sheehan; Wells & Wilkeson, George Phillips; Connecting Terminal and Watson, P. M. Kane; Evans, Bennett, Union, Ontario, and Thornton & Chester elevators, John F. Egan; Exchange, Michael Donovan; Empire, foot of Ferry Street, M. Hurley. William H. Kennedy has been appointed general superintendent and Anthony J. Boland chief elerk.

The following appointments have been made by Mr. Kennedy for the freight docks; West Shore freight docks, L. Mahar, general foreman; stevedores, M. McGowan, Thomas O'Shea, and John Litz; foreman of coopers, James Malone.

There is still the utmost indifference over the shipment of coal. The Pennsylvania company last week made three or four charters to side ports and then stopped. Monday, when the liner McVittle wanted a load she had to be sent to Erie for it. Leading shippers say that they may wait a fortnight before asking for tonnage, though it is very doubtful if they do hold off so long. The delay is not a matter of rates, for there will be no effort to change the 40 cent rate made by inference by the other rates.

Lumber shipments are in about as quiet a condition as coal. So far nothing has been taken on which a rate is made public but the Sam Marshall tow at $1.60 from Green Bay points. The Germania and consort Jenness, with lumber from Alpena, are bound here, but the shippers will not give out the rate.

Pfohl & Son are going heavily into the handling of wet grain this season in addition to the wet flour business they have in hand already. They are interested in an invention which they are preparing to set up in a new elevator they will build on the dock at the foot of Genesee street, but there is a hitch about the patent and they will not be able to go into the spring trade at all.

Lake men are watching the coming out of the steamer Queen of the West with the new engine they are putting in her. She has been rather noted for the speed that she didn't make, but now with the Calumet's engine in place and steam-generating accommodations to match she will take the wind out of a lot of steamers that used to go by her five miles an hour. Then if the beaten skipper doesn't happen to know what has happened he will imagine that his boat has lost her grip and his engineer will catch it.

There have been dispatches enough from Washington within a week screaming that the Buffalo breakwater was "safe" to crib and ballast the whole structure without any timber or concrete to put with them. Let us hope that the question is really settled, whether any member of Congress gets the glory of it or not. There is to be a five mile harbor of refuge southward to Stony Point and that settles it.

Tugmen are still full of the idea that there is going to be trouble at the new bridge. They say that if the temporary structure or the south approach is touched by a passing boat it will go into the river and with it as many people as happen to be on it. But the contractors are sure that everything is as safe as it can be made, and there you are.

The Union line has lost two good captains this season. A few days ago Capt. Clossey of the Rochester died and now comes a despatch from Oswego announcing the death of Capt. Garden. Mate Wulke was put in command of the Tioga in place of Capt. Garden.

John Gordon is kept in a "state" about all the time by someone who is putting into print the announcement that he has either done something important in the steamboat line or is just going to. Then he stands up on both feet and protests that he is doing nothing of the kind and so far has proved it by nothing coming of the stories. I am of the opinion that he is now in duty bound to do something to show how much he appreciates the interest taken in him.

The local papers have devoted the usual space to the robin and the Sassafras Indian, but have shipped "Old Tom" Linn, the dock fruit and candy dealer. He hibernates somewhere through the winter and comes out in the spring, good as new. He took possession of his stall in front of the tug office last week and it all looks natural there now. Tom came over from the old country long ago, but he is not the man to forget it, and few exiles of Erin are better supplied with newspapers from that country than he.

The first arrival of the season, the steamer Thomas Davidson, gave the cue for the rest of the fleet. She was a foot "by the head" when she came in and was drawing about an even 16 feet forward, but she found the water too shallow and after running into the doek and the steamer Maytham in the lower creek went aground at the Watson elevator. After the water came up a little two tugs dragged her up to the City elevator. It is expected that the dredges will be at work on the

creek bottom next week, and they would have been started before now but for the delay of the contract in the common council. The work is 20 feet, but it is a hard matter to get it with this stage of the lakes.

The head lines in some of the papers tore up the Union Steamboat Company into small bits this week in trying to report the changes that have taken place there, the reality being merely that the line is now centered in New York, except as to operating the fleet. The same thing was done with the Anchor line in a measure several years ago. The idea in both cases being the reduction of expenses. There was no occasion to suggest an obituary in heading the item, as one Detroit paper did.

JOHN CHAMBERLIN.

DULUTH.

OPENING MOVEMENTS AT THE HEAD OF THE LAKES—CONDITION OF GRAIN FREIGHTS.

Special Correspondence to The Marine Record.

DULUTH, Apr. 21.

The announcement of the opening of the Soo canal came about a week sooner than vessel men at the head of the lakes had looked for. Several owners were anxious to get their boats out early, but had no idea that they would get out for a week yet at least. The Northern King, of the Northern Steamship Co.'s fleet was the first boat to clear for Buffalo this season. She left on Monday last with a cargo of flour. Few of the boats which wintered here are in shape to go out, many of them being still in the process of spring overhauling. It is expected that the City of Duluth will clear some day this week for Chicago, being the first vessel of that line to clear this season.

The lake in front of Duluth harbor is now entirely clear of ice, and the only obstruction to Lake Superior navigation, if there is any, exists at the lower end of the lake between Whitefish Point and the Sault, where there is believed to exist a large field of float ice.

Within ten days of the first arrival here, Duluth elevators will load out, providing the boats arrive, nearly, if not all, of 9,000,000 bushels of grain, of which, 7,500,000 will be wheat. As near as can be determined now about 7,000,000 bushels of this grain is chartered for Buffalo and the balance to various ports on Lake Erie and Ontario, about 1,000,000 going via Kingston.

Wheat in store at the head of the lakes is apportioned among the various terminal elevator lines as follows: Belt line, 1,295,698 bushels; Consolidated, 5,360,097; Globe, 4,359,707; Great Northern, 1,584,292; Superior Terminal, 1,401,089; Consolidated B, 364,731; Consolidated H, 96,315; aggregate, $14,546,929; in store at Minneapolis, 18,906,480 bushels.

The American Steel Barge Co.'s dry-dock opened for business Monday and the North Wind was the first boat to enter.

The labor disturbances on the Mesaba range which have been threatening, are now thought to have blown over. The collapse of the Ishpeming miners' strike was responsible for it. The Mesaba miners would have gone out, to make a fight for the eight hour day had the meeting at Ishpeming given the word. Now, however, no trouble is looked for.

Four of the Bessemer Steamship Co.'s boats, the Rockefeller fleet, will be registered at the Duluth customs office this week. They are the Pillsbury, Washburn and the barges 102 and 103.

The work of widening the channel approach to the Duluth & Winnipeg ore dock in Allouez bay will be begun as soon as the dredges can get to work. Contracts for this dredging will be let in a few days. The new extension to the dock will probably be completed by April 25. Ore receipts are expected to commence by that date or before.

The mines have begun loading out ore already and the Duluth, Missabe & Northern ore dock will begin receiving ore the latter part of this week. Many of the mines have large stock piles.

Whistle signals of the United States Weather Bureau will be blown daily by Elevator E this year announcing the winds expected for the succeeding 24 hours at the western end of Lake Sxperior. The signals will be blown always at 10:20. During the season of navigation the whistle of the Imperial Mill will blow these signals at 10 p. m. whenever the information then at hand is of especial importance. Force-of-wind signals are as follows: Light wind, one long whistle; fresh wind, two long whistles; brisk wind, three long whistles; high wind, four long signals. The direction of the wind is indicated by short whistles as follows: North, northeast and east, one short blast, southeast and south, two short blasts; southwest and northwest, three short blasts; variable, four short blasts.

The wheat rate remains at 3c, though the shippers are becoming more earnest in their demand for a cheaper rate. Yesterday there was considerable bidding for tonage for less than 3c, but there was no break. Some of the shippers assert that the rate will be as low as 2½c before the season is far advanced.

While lumber shippers think the rate to Buffalo will reach $1.75, nevertheless charters have already been made at $1.87.

E. E. E.

FLOTSAM AND JETSAM.

The Welland Canal will open for navigation May 1.

The Kendall Marine Reporting Agency, Port Huron, have attached a small lightship to the buoy on the middle ground, opposite the mouth of Black River, which is lighted every night.

Lauriau Roleau has been appointed assistant keeper of the light-station at St. Mary's Falls Canal.

Henry J. R. Baker has been appointed assistant keeper of the light and fog signal at Marquette.

The Northern King was the first to leave Duluth, and the Zenith City the first to leave Gladstone with ore.

Col. G. J. Lydecker states that according to the Sand Beach record Lake Huron is 10 inches lower than a year ago.

The signals on Duff & Gatfield's docks to indicate the depths of water at Limekiln Crossing will be the same as last fall.

THE RECORD is glad to announce that the prosecution at Milwaukee, of Capt. Robert C. Parsons, of Buffalo, on charge of criminal assault proved a case of blackmail, woven out of whole cloth.

The Milwaukee wage rate for seamen has been reduced 25c. per day, to correspond with the Chicago rate. This move was taken by the owners, and it is said the union seamen will accept the rate.

The death of Capt. James Niland, who formerly sailed the Alaska, of the Anchor Line, is announced from Cape Vincent, N. Y. He was a brother of Capt. Martin Niland, of the Northern Wave.

United States Engineer Symonds is setting out a large number of sycamore, locust, willow and other hardy trees on the neck of the peninsula at Erie, to aid in building up new land by the deposit of sand.

The tug Roy lies sunk on the course between Bar point and turtle light, about nine miles from Bar point dummy. Craft bound for Toledo or going from Toledo to Desroit should exercise care and keep a little to the eastward of the course.

Port Wing, situated 25 miles east of Duluth on the south shore, will be quite an important lumber-shipping point the coming season. There is a large amount of lumber at Port Wing and there will not be less than 14 feet of water for the accommodation of vessels.

Capts. James Playfair, W. H. Featherstonehaugh, and W. A. Clark have issued a writ against the Reliance Marine Insurance Company, of Liverpool, England, for $17,300 on a policy. The insurance was on the steam barge W. B. Hall, which was wrecked last fall.

The new ore dock at Escanaba has been completed. It has 226 pockets (26 more than the old dock) and its capacity is 30,000 tons. The capacity of the five Escanaba docks is now 160,000 tons. The new dock is 12 feet higher than the old dock, which will facilitate loading.

Soundings at Ashtabula shows that over the sand bar just outside the piers there is less than 15 feet of water. Masters should keep well to the eastward until inside the piers, and then proceed along the west pier where there is a channel 80 feet wide, with over eight feet of water.

An examination will be held at Washington early in May for candidates wishing to enter the revenue cutter service as cadets. There will be 12 and possibly 14 vacancies. Candidates must be between 18 and 24 years old and unmarried. The pay is $500 per year, and one commuted ration.

The death of Thomas Peterson, a veteran lake captain, is announced from Ahnapee, Wis. Capt. Peterson sailed out of Chicago as early as 1836, and he is said to have taken to Chicago on his vessel stone from Milwaukee for the foundation of the first Cook county courthouse. Capt. Peterson's age was 80 years.

Capt. W. P. Garden, who was master of the Union Liner Tioga last season, died at his home in South Scriba, near Oswego, last Saturday, of a complication of diseases which appears to have ended in pneumonia. He was a good sailing master and a man respected by all. He entered the Union Line in 1889 and has sailed varions steamers in the line since that time.

Capt. Joseph Rouleau will establish three lightships in St. Mary's River at the Encampment. Two will be stationed at the turning point, at the foot of Sugar Island, on the black stake side, and will carry two lights, a green and a white one. The third ship will be anchored on the red stake side of the Dark Hole. This ship will have a red and a white light. Capt. Rouleau will also place a light at the head of St. Joseph's Island. With these increased facilities, the navigation of the river after dark will be practically as safe as in daytime.

LAKE ST. CLAIR AND DETROIT RIVER NAVIGATION

The following notice has been furnished the RECORD for publication by Lieut. J. B. Cavanaugh, Corps of Engineers, U. S. A., Detroit, in charge of the twenty-foot channel improvement:

Owing to unavoidable delay in dredging operations, it is impossible to throw open the new ship channel from the head of Detroit River into Lake St. Clair for the full width of 800 feet, but a channel 15,000 feet long and 400 feet wide at the upper end in Lake St. Clair, widening to 800 feet at the head of the Detroit River, has been buoyed for the use of deep draft vessels.

The point at which this channel is to be entered from the eastward by boats bound down and to be left by boats bound up, is marked by the last red buoy, numbered 16. At night the channel will be lighted by three lights on its eastern edge, placed upon pile clusters and maintained by the Lake Carriers' Association. The Lightship will shortly be moved to the eastern edge of the channel near the last red buoy numbered 16, and at night will mark the point where the channel is to be entered by boats bound down and left by boats bound up. The channel thus buoyed out will allow a draft at least 18 inches greater than can be carried through the Detroit River at Ballard's Reef and below the Lime-kiln Crossing, and no other part of this channel should be used for the present; therefore, vessels bound up coming abreast of the last red buoy or at night abreast of the Lightship should turn sharply to the right until clear of the dredged cut; and similarly, boats bound down should keep to the eastward of the dredged cut and until nearly abreast of the last red buoy or at night of the Lightship and then turn sharply into the dredged cut. When passing the dredges and sweeping scows which are at work immediately west of the buoyed channel boats should check down so as to interfere with the work as little as possible.

The supposition upon which this part of the channel is thrown open to navigation is that vessel men will show a proper appreciation of the trouble and inconvenience taken to give better water facilities at this point, and it is expected that they will use only that portion of the dredged cut buoyed out as above described and will also endeavor, by checking their speed and keeping near the eastern edge of the channel, to interfere with the work as little as possible.

The eastern half of Section 8 of the Ship Channel, at the mouth of the Detroit River, will also be thrown open to navigation, and, as soon as the requisite authority is obtained from the Canadian Government for the use of buoys, the eastern edge of the channel will be buoyed out. The black buoys marking the old channel will remain in their present position so that boats can still use the old channel.

The eastern half of Section 8 gives them a channel 400 feet wide, and in using it boats should keep within this distance of the line of buoys, as the western half has still much work to be done upon it and should not be used at present.

Capt. T. C. Herrick, of the steamer Sage, presented Mr. E. G. Ashley, in behalf of Toledo Branch, Ship Masters' Association, with a heavy gold watch chain pendant on Wednesday of last week. The pendant is one and one-half inches long, and an inch wide. On the face is seen a twisted rope of gold all around the pendant. An anchor the full length of the pendant, with a gold rope in the eye of the stock appears in bold relief and across it is the flags of the association, with the side is engraved the following: "Presented to E. G. figures "854," his number in the lodge. On the reverse Ashley, April, 1896, by Toledo Lodge No. 9, S. M. A."

GOOD WORDS FROM OSHKOSH.

UNION IRON WORKS,
OSHKOSH, WIS., April 13, 1896.

Alex C, Bates, Cleveland, Agent,
Empire Boiler Cleaning Compound:

DEAR SIR:—After using your compound one month, I opened the boiler and cleaned out the dirt, then I let it go for one month longer, and cleaned it out; took out scales 3 to 4 feet long and about ⅜ inch thick, and now the boiler is just as clean as it was when made. I am highly pleased with it and shall recommend it to any one having use for it.

Yours truly,
H. C. DOMAN, Prop.

RHUMB LINES AND TRUE COURSES.

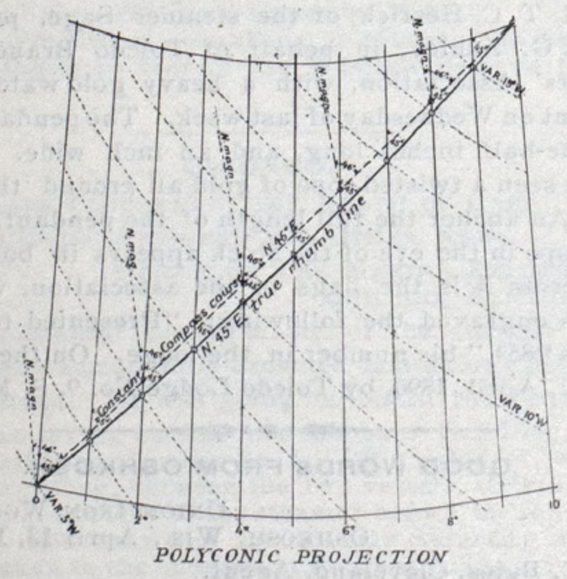
In the Record of April 2. we commented briefly at the end of a communication from Capt. H. C. Pearsons, some of whose claims the RECORD did not wish to appear as endorsing. Space and time were then too limited to admit of more than a brief reply. Further comment on his article is now submitted:

In the beginning of Captain Pearsons' letter he states: "It is generally supposed that when a vessel is correctly started on her course, and is kept strictly to that course as indicated by the ship's compass, she makes a track that crosses the meridian in its run or voyage at the same angle." "Such a track is called a "rhumb-track."

This statement implies that mariners are generally ignorant of some of the first principles of navigation, such as the change in direction of the needle of the mariner's compass with change of locality; for how can the writer of this article assume that it is *generally supposed* that a ship, steering an invariable compass course, passes over a track that crosses the meridians at the same angle, when all know, from the common knowledge of centuries, that, in a region of changing variation, if the compass course remains the same, the true course at successive meridians, or the angle at which the track crosses them, cannot also remain the same

From Captain Pearsons' definition of the rhumb-track in the above quotation and his reference to a "true rhumb-line." in paragraph 5 of his letter, it is difficult to interpret what his conception of a rhumb-line is, and whether he thinks there is more than one kind. For the benefit of those who have read his letter it is necessary to state that there is only one kind of rhumb-line and that it may be defined as the curve on the earth's surface which cuts, at the same angle, the different meridians over which it passes. This constant angle which it makes with the meridians is the course, and is called the true course to distinguish it from the *compass course.*

The principles of construction of the new lake charts are such that any rhumb-line will be projected upon them as a straight line. In rhumb-sailing, the ship keeps on the rhumb-line passing through the place of departure and the place of destination. This is the ordinary sailing used in navigation, for when out of sight of land, the compass determines the ship's track, and hence the selection of that track which makes a constant angle with the meridian. Strictly speaking, in order that a navigator may follow a rhumb-line, he must change his course at the same rate as the variation of the compass changes in going from one port to another. To accomplish this is, of course, impracticable, but he can approximate very closely to a rhumb-track by altering the course at frequent intervals along the track to compensate for the accumulated change in the variation of the compass during these intervals. This Captain Pearsons has very clearly and acceptably pointed out; but it has been the common practice of seamen for centuries, only they have employed an interval between the changes of compass-course more in keeping



POLYCONIC PROJECTION

FIG. 1.

with an appreciation of the uncertainties in the heading of a ship which is subject to the leeway due to winds and to currents of uncertain strength and set.

Captain Pearsons writes: "The conditions necessary that a ship may sail on a true rhumb-line, when steered to a constant course, are that

"The change of variation between the initial and terminal points of the voyage must be just equal to the change in the inclination of the meridian for the voyage: i. e., to the convergency of the meridian passing through the two points."

This statement has no scientific foundation. Let us investigate the example which he states, as follows: "Thus, if the change of the inclination or the convergency of the meridians passing through the points, is say,5°,and the change of the variation between those two points and the change of the variation between those

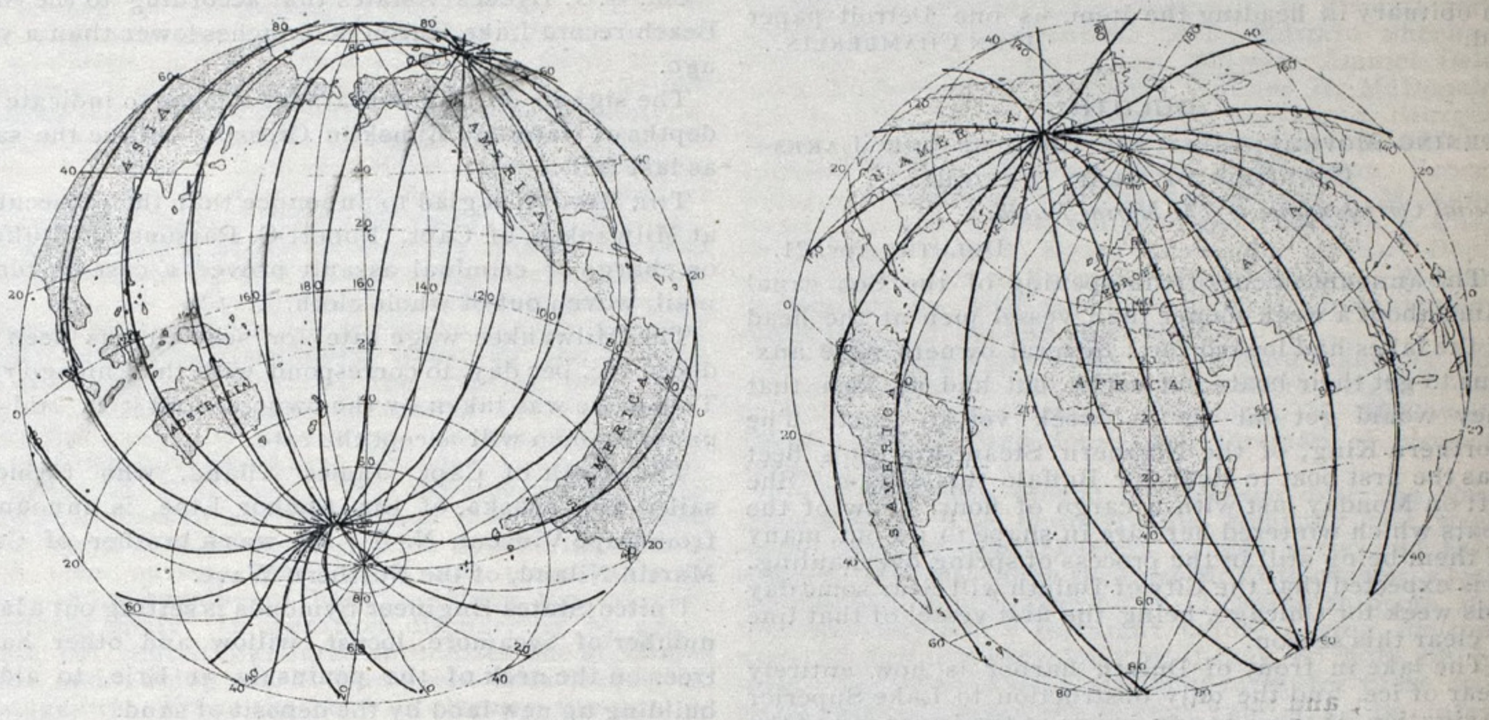


FIG. 3.

The two diagrams give a full view of the lines of actual direction of the compass needle when out of reach of all magnetic influences except the earth's. The magnetic lines relate to the year 1895.

two points be also 5°, then the track of a ship sailed on a constant course between those two points, would be a true rhumb-line, and on a Mercator chart would be represented by a right line."

We assume that Captain Pearsons means by inclination of the meridians the angle of convergence of these lines on a polyconic projection, as employed in the U. S. Engineers' lake charts.

With this understanding, we turn to the annexed diagrams on which the rhumb-line of, say 45°, appears as the curved line AB on the polyconic projection. This would be a straight line on the Mercator projection.

Now, keeping in mind the correct definition of a rhumb-line, we know that it must make a constant angle with the successive meridians, other-wise it is not a rhumb-line as defined in connection with the Mercator charts. Evidently, the compass courses, if we neglect, for the sake of simplicity, the deviation and other influences except the variation, would be as follows:

At station	1,	true course	N. 45°E.,	var.	10° W.	Comp. Course	N 55°E.
" "	2,	"	N. 45°E.,	"	11° "	" "	N 56°E.
" "	3,	"	N. 45°E.,	"	12° "	" "	N 57°E.
" "	4,	"	N. 45°E.,	"	13° "	" "	N 58°E.
" "	5.	"	N. 45°E.,	"	14° "	" "	N 59°E.

We see from this that, if a ship sailed on a constant compass course between two points A and B, she would not describe a rhumb-line on a Mercator chart in spite of the conditions stated by Captain Pearsons, viz.: that the variation and the inclination of the meridians are equal to each other.

Captain Pearsons then proceeds to state that "this lamentable mistake that a ship's track when steered to a constant compass course may be represented by a right line on the Mercator chart is an outgrowth from another mistake equally untenable, and that is the idea that 'there is one individual point, that, as a center, controts and gives direction to the compass needle in the entire magnetic hemisphere.' There is no such thing.

"From well-known laws of navigation it is easy to show that the near portions of a magnetic field will control and give direction to the compass needle, in spite of a larger and stronger position of the field that may be more remote. So that by changing the place of the compass, we bring it within the influence of other portions of the magnetic field ,when we find that we have a new pole, and so we may continue to do indefinitely, i. e., to say, instead of having merely one magnetic pole, we may have as many as there are possible positions for a compass in the magnetic hemisphere."

This curious illustration has no connection with the preceding one concerning the rhumb-line and the influence of the convergence of the meridians in compensating changes in the value of the variation of the compass.

The magnetic poles of the earth are defined to be the points where there is no horizontal magnetic force, or where the dipping needle points vertically downward. There are two such points, one in the northern and one in the southern hemisphere.

The magnetic poles are the points where the value of the potential is a maximum or a minimum, or is stationary. At any point where the potential is a minimum, the earth end of the dipping needle points vertically downwards, and, if a compass needie be placed anywhere near such point, the north end will be directed toward it.

At points where the potential is a maximum, the south end of the dipping needle points vertically downwards, and the south end of the compass needle is attracted. The theory of terrestrial magnetism, as given by Maxwell, shows clearly that if there are n points on the earth's surface where the potential is a minimum, there must be (n-1) other points where the north end of the dipping needle points downwards, but where the com-

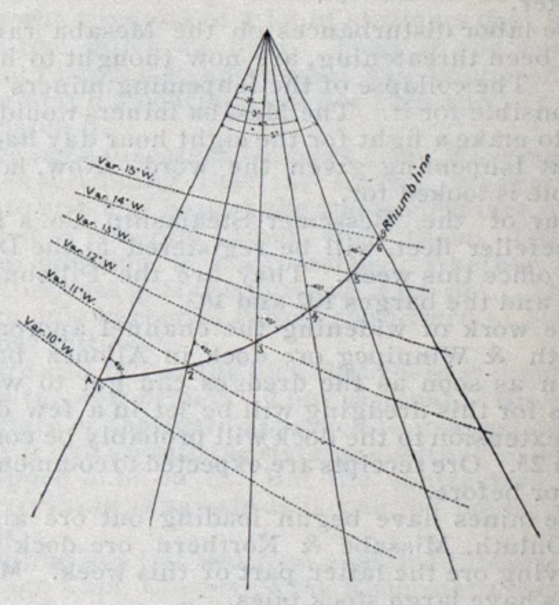


FIG. 2.

pass needle, when carried in a circle around the point, instead of revolving so that its north points constantly towards the center, revolves in the opposite direction, so as to turn sometimes its north and sometimes its south end towards the point. If we call the poles where the potential is a minimum true north poles, then these outer points may be called false north poles, because the compass needle is not true to them. If there are n true north poles, there must be (n-1) false north poles, and likewise, if there are m true south poles, there must be (n-1) false south poles. The number of poles of the same name must be odd, so that the opinion, at one time prevalent, that there are two north poles and two south poles, is erroneous. Observations carried on for centuries in all parts of the world, and the exhaustive theoretical investigations by Gause have proved that there is in fact only one true north pole and one true south pole on the earth's surface, and therefore, there are no false poles.

In the accompanying diagram, the points toward which the heavy lines converge in the northern and southern hemispheres are the magnetic poles. The

shaded areas represent the outlines of the land masses of the earth, and the lighter lines the geographic meridians of longitude and parallels of latitude.

The direction of the heavy lines with reference to the geographic meridians exhibit the actual directions assumed by the compass needle in all parts of the world, and they show at once why, although there is only one magnetic pole in each hemisphere, the variation of the compass should have different values in different localities.

NAVIGATING ON A TROLLEY LINE.

To the Editor of The Marine Record:

The communication on lake charts, projecting courses, etc., contained in your issue of April 2, will no doubt have to result of stirring up inquiring minds among the practical sailing community and perhaps cause them to ask themselves a few questions relating to shaping courses. The attention of those most directly interested regarding the path which a bottom is traveling over the ground, being centered on the elucidation of the corrections named deviation and variation. Then the object or reason for writing such an article will have been accomplished, and your skilled contributor (whom I recognize as an old-time friend) will not have written in vain.

As all the world knows, there is usually a wide difference to be found between theory and practice. Furthermore, the theorist in nine cases out of ten soars away beyond practical convictions or experiences, and, if you please, will demonstrate with due mathematical precision that the moon is made of green cheese, or to keep to the subject in hand, that the ship is not or ought not to be in a position where she is actually placed, and this, too, is one of the great failings of young pilots and navigators, who not unfrequently place too much reliance on their practice, observations of celestial objects, courses steered, bearings, etc., and are sometimes, like the theorist, disagreeably astonished to find that they have fallen into mischief while apparently striving for the best results.

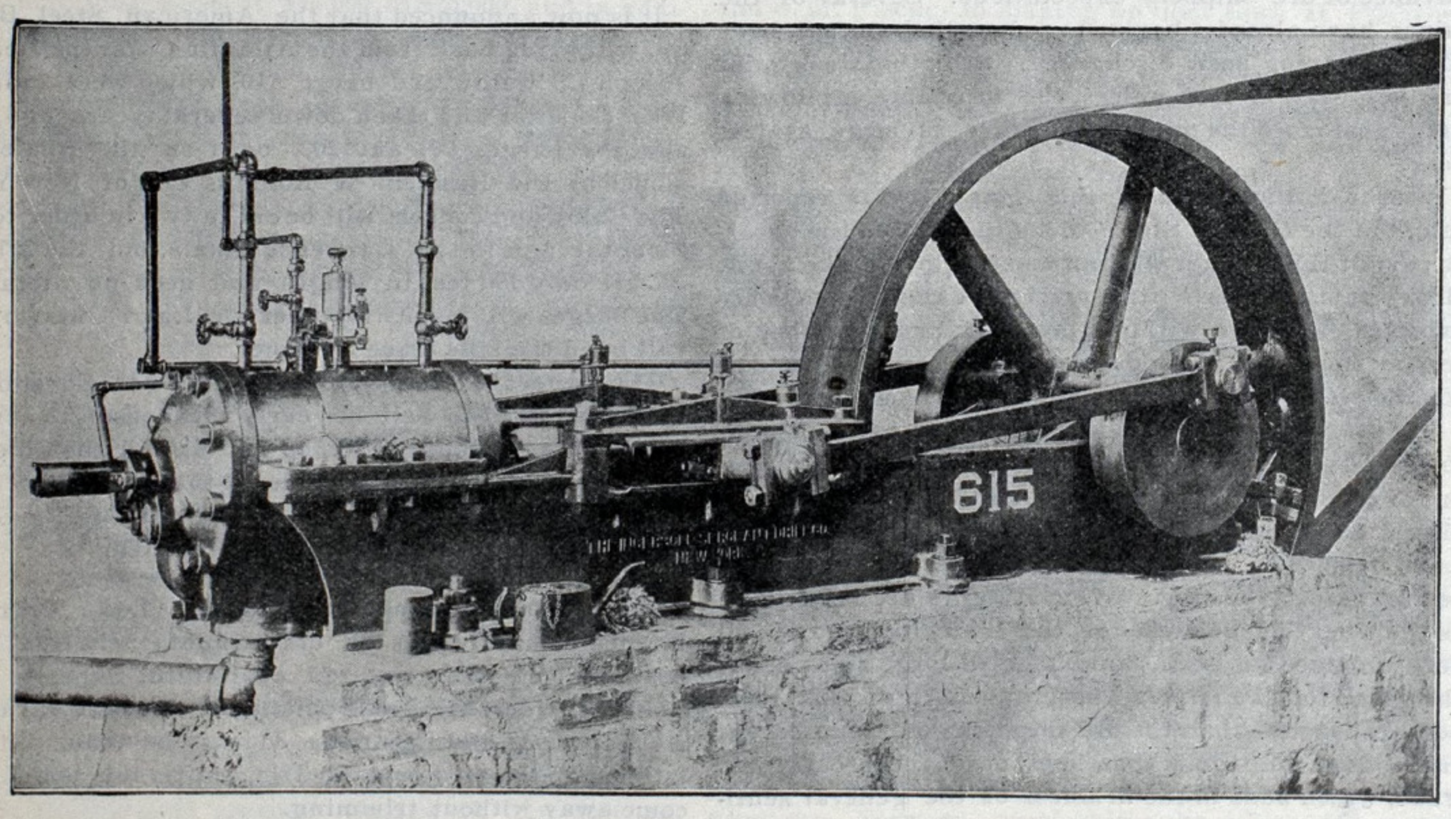
The foregoing is partly the impression which 1 received from the tenor of your late correspondent's article on shaping courses. In the first place, lake charts are stated to be par excellence, finally winding up with the assumption that both projections in use are sadly erroneous, inasmuch as the problem of "keeping a vessel on her proper course has not been fully provided for." Well, this is indeed a revelation to those who, like the writer, have placed implicit confidence in the Mercator projection and never found it to fail in actual practice the world over, or sea over. or otherwise. Notwithstanding the supposed inclination of the meridians on the Mercator projection, as treated of by your recent contributor, too much stress is also laid on a "constant compass course," as in practice there is nothing so inconsistent, especially with a change of magnetic latitude and in iron or steel ships. The object is held forth that variation must be applied in an arbitrary manner, at point of departure, so as to court later inaccuracies, thus making a bad landfall and finding the vessel as she was actually directed, viz.: out of her course at place of destination. The correction for variation is perhaps the least element to be considered in keeping a vessel on her proper course, as the curves are comparatively permanent in all parts of the world. On the other hand, deviation alters at almost every point of the compass, and changes with a change of magnetic latitude. Then also comes in heeling error, leeway, currents, slovenly steering, and finally the fact that absolute correctness in determining the exact spot over which a vessel may be placed is unattainable at least from any known methods of learning same from celestial observations, and the suggestion that courses may be steered within half a degree, with several elements under varying conditions to be allowed for is simply a hypercritical effusion of an impracticable nature.

No careful man ever allows variation by the handfull, or permits an indiscriminate use of the correction; nor yet does he expect his vessel to be steered to half a degree. And in this connection it is borne in upon me that the grand finale in these days of electricity will have been arrived at when a trolley wire can be strung along the lakes and vessels of all classes hooked on. In such an event no sinuous curves or herring-bone like courses would be possible, and the acme of constant compass course routes would then have been reached, so as to suit even the most censorious theoretical critic. That courses steered are made good we have every evidence of and it is not the work of those who are best calculated to advise with the interests of the lake marine on this subject, to cast aspersions or befog in any particular the ordinary practice which has carried successfully for so many years thousands of the most skillful pilots on the face of the earth, and of such are the majority of lake masters. JOHN SWAINSON.

CHICAGO, ILL., April 18, 1896.

COMPLETE TABLES OF SAILING DISTANCES.

The Hydrographic Office has just issued a set of complete tables of sailing distances—given in statute miles—between all the more important points on the Great Lakes. Three tables give the distances respectively between points on Lakes Erie and Ontario, Lakes Michigan and Huron, and Lake Superior. A large table then gives distances all around the Great Lakes, taking in 119 ports. They are backed with cloth, measure 19x31 inches, and form a valuable addition to any collection of lake charts, besides being useful in themselves to many non-navigators. The price is 50c. The RECORD is also headquarters for all other hydrographic charts, and in fact all nautical publications. Fourth floor Western Reserve Building.

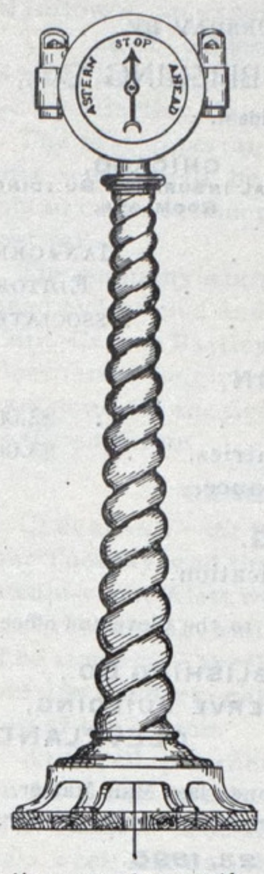


INGERSOLL-SERGEANT COMPRESSOR FOR CHICAGO SHIP BUILDING CO.

The schooner E. T. Judd will go to Southeast Bend, St. Clair River. to rai-e the schooner Mary, which was sunk there last fall.

MORRISON'S TELLTALE.

Mr. Frank Morrison, the leading compass manufacturer and adjuster, designed during the winter a "telltale" or indicator for the bridge, which should show the officer in charge of the vessels just how his signals were being responded to. A number of the more modern lake steamers are fitted with engine room telegraphs, but Mr. Morrison's is far ahead in point of simplicity of construction. The part of his machine which is on deck is seen in the cut, the dial containing only the words "Stop," "Ahead," and "Astern." Mr. Morrison figures that the necessary signals can be given by the whistle about as well as by any mechanical telegraph, but he realizes the importance of a master knowing whether or not his signals are being heeded or understood—in fact, that he should know just what the engines are doing. This is the mission of the telltale.



Mr. Morrison's device is operated by a single wire, which passes along underneath the deck, through the same holes as the whistle wire. It is attached to the rock-shaft, and the moving of this by the engineer adjusts the wire so the dial needle will point in different directions. The degree of speed is shown by the distance the needle point travels from its normal position at "Stop" toward the bottom. Mr. Morrison has already installed one on the steamer J. H. Wade, and it is giving great satisfaction. Some of the line boats have already made inquiries, with a view to purchasing.

Another great advantage in this indicator is the arrangement of lamps on each side of the dial, binnacle-style, so that the indicator shows what is being done just as well by night as by day. Its simplicity is a sufficient guarantee against getting out of order.

BELT-DRIVEN AIR COMPRESSOR.

The Chicago Ship Building Co. has recently installed a 12¼x14 in. Ingersoll-Sergeant class "B" belt driven air compressor, of the piston inlet pattern, for operating pneumatic hammers, drills and riveters, punchers and hoists, at their shipyards in South Chicago.

Compressed air has been fonnd so advantageous for this work that this company has purchased and will shortly install another Ingersoll-Sergeant compress, size 18x18¼x24 in., of the class "A" piston inlet type. The combined capacity of these two machines will give the shipyards about 1,000 cubic feet of free air per minute.

The illustration shows the class "B" compressor now in operation, and as this pattern of machine is well adapted to shipbuilding requirements, we give a detailed description below.

The air cylinder is of the well-known piston inlet pattern, diameter of cylinder 12¼ in., stroke 15 in. It it made of the best cast iron suitable for this purpose, and of proper strength and thickness to allow for reboring. Not only the air cylinder, but the heads as well, are completely water jacketed, thus insuring a large and effective cooling surface. The bed-plate is of the box-girder type, made in a single casting, and of sufficient strength to withstand the severest strain of air compressed work. The main shaft is of hammered steel, 5 in. in diameter. The bearings are provided with removable and adjustable bronze boxes, and the cranks are of the disc pattern, counterbalanced and turned on the face and edges. The crosshead is of cast steel, very heavy, and with a special adjustment to prevent its weight coming on the piston rod. The piston rods, connecting rods and crank pins are of the best forged steel. The piston inlet valves in the air cylinder are warranted by the company for a period of five years.

The recent sale of the gospel ship Glad Tidings by Capt. Bundy to Mackinaw parties should not be taken to indicate that he has given up this feature of his mission work. He still has the new boat which was built for him at Grand Rapids last fall, but the new boat is smaller than the old, being only about forty-five feet in length.

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(ESTABLISHED 1878.)

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CLEVELAND, O., APRIL 23, 1896.

NOTICE OF REMOVAL.

WE wish to call the attention of patrons and friends to the fact that the headquarters of THE MARINE RECORD have been removed to a suite of offices in the WESTERN RESERVE BUILDING (FOURTH FLOOR), at the corner of Superior, Water and Spring streets. The Western Reserve is the most convenient to the harbor of any of the modern office buildings, and we hope to receive early and frequent calls from our friends all around the lakes. The Chicago office of THE RECORD has been removed to ROOM 308, ROYAL INSURANCE BUILDING, Capt. Thomas Williams continuing in charge.

SERIOUS objection is raised by those interested who live on the American side of Lake Ontario, because the Welland canal is not to be opened until May 1. It is charged that the Dominion government is working in the interest of Canadian commerce in preventing navigation until her own fleet can get under way. This is hardly likely, as the date seems to have been set with reference to the state of the ice, and the sudden opening of navigation has surprised everybody. But at any rate, the Canadian government should not be criticised for working in the interest of its citizens. If the United States had consistently pursued the same policy in past years, the American merchant marine would now have first place on the high seas, as well as the Great Lakes.

IT is a pleasure to note that the chances seem all in favor of the appointment of Col. Wm. Ludlow, Corps of Engineers, U. S. A., to the place vacated successively by the death of General O. M. Poe and Major Post. This assignment is in itself a vindication of Col. Ludlow's efficiency when formerly located in Detroit in the Lighthouse service, and removes all reflections that were then cast upon him by his recall, without in any degree relaxing the stern rules of discipline. Col. Ludlow's only "fault" at that time lay in his attempting to gain, by direct application, information which would enable him to expedite his own work. He was acting solely in the interest of lake commerce and had nothing personally to gain—not even much credit. He was transferred because he had neglected to make use of a few hundred yards of red tape, and the vessel interests are glad to believe that so earnest a sympathizer with their cause will be returned to the lakes and placed in a position where he will be able to be of even more service to them. Incidently, it must be said that they are more than pleased with the efficiency and energy shown by Lieut. J. B. Cavanaugh during the period in which he has had temporary charge of the work, and it is to be hoped that his merits and abilities will be duly recognized by the War Department.

THE House Committee on Foreign Affairs will report favorably upon a joint resolution appropriating $75,000 for the expenses of a United States commission to act with a similar British Commission for determining the boundary line, under existing treaties, between the United States and Canada. By misinterpretation of evident meanings of the treaty, as well as by proceeding upon erroneous information, the United States has been euchered out of 1,000 square miles of finer land, it is stated. On lakes Erie and Superior, grave inaccuracies have been found. Various charts, which were supposed to be official, differ widely from each other. It is important that this boundary question be settled as soon as possible, in order to avoid any complications further than those which have already arisen, in connection with the fisheries troubles, etc. This may lead to some cooperative action by the two governments to solve the fishing problem, taking it altogether out of the hands of the States.

IT is pleasing to see that the manufacturing and commercial interests of the country are so active in working on behalf of Senator Frye's bill to create a Department of Commerce. There is no surer way to secure better recognition for American shipping and to obtain legislation which will restore to this country its ancient prestige upon the high seas. While the establishment, a few years ago, of a Department of Agriculture, is not to be criticised, yet the reasons for a Department of Commerce are ten times as urgent. The various officials who now have oversight of sections of the merchant marine would thus be brought under one head, and made many times more efficient. Of all the many wise measures introduced this session by Senator Frye this is certainly the best, because its enactment, if all the others were dropped, would in a short time lead to the adoption of the many reforms which he advocates. Let the Department of Commerce be created by all means, and in time for the next administration to open with such a department in good working order.

THE FREIGHT SITUATION.

The feeling seems decidedly stronger than a week ago. Vessel men are firmer than ever in their position of refusing less than $1.10 from the head of the lakes and $1 from Marquette on season charters, and the ore men show no marked disposition to resist this rate, although wild rates are not veay strong at present. Several boats have taken $1 on first trips from the head of the lakes, as the season has opened far in advance of ore shippers' expectations. Several of the mines have already begun to reduce their output, over 500 men having been discharged. Still the stock piles are very large, and unless the forces are cut down a great deal more the output will prove as large as last year.

Over a million tons of this year's ore is reported sold, but the Illinois Steel Co. has purchased the greater part of this, and it will not come to lower lake ports. Heavy sales for the Pittsburgh and Valley districts are expected, however, within a few days, and a number of season contracts will doubtless be closed within the coming week. The wild Escanaba rate is strong at 55c.

One circumstance which has proved of great benefit to the vessel interests is the almost simultaneous opening of navigation at the Straits and the Sault. This is almost unprecedented, and prevented a rush of boats to Lake Michigan, which would certainly have had a demoralizing tendency. Grain freights are very quiet, as the wheat at the head of the lakes has nearly all been provided for at 3c, a number of large ships being chartered for two trips. There was more of this business transacted than the ore shippers had counted on, and a large tonnage is thus kept out of the early ore trade, which adds to the firmness of the general sentiment.

Coal is not coming forward as rapidly as the boats want it, and rates are not stiff. This is not taken as an indication of what will rule for the season, however, as the coal men, like the ore dealers, are not as far forward as the weather. To the head of the lakes, 35c is being paid on soft coal; to Charlevoix, 55c; Green Bay, 45c; Milwaukee, 40c; Saginaw, 45c; Mackinaw, 40c; St Clair river ports, 35c.

APPOINTMENTS FOR NEXT SEASON.

The following appointments of masters and engineers for the season of 1896, have been announced by owners:

STEAMER.	MASTER.	ENGINEER.
Bessemer, Sir Henry	Smith, E. M.	
City of Genoa	Weeks, J. L.	Mitchell. J. D.
Naples	Bell, George	Fritz, John
Columbia	Goodale, F.	Allbec, C. N.
Craig, John	Byers, J. C.	Rae, E. J.
Cumberland	Stewart, W. G.	Hogle, A. F.
Eddy, J. F.	Chateau, W. E.	Carter, Andrew
Elphicke, C. W.	Moody, W. H.	Jesson, Henry
Garden City	Foster, H. S.	Kneal, P.
Gilchrist, J. C.	Blattner. William	Stone, Henry
Gratwick (wood)	Galton, F. D.	Graves, Henry
Hiawatha	White, A. E.	Butler, E. D.
Hurlbut, C.	Maddock, J. C.	Bennett, J. C.
Kendall, H. J.	Kendall, H. J.	
Lindsay, A. G.	Drury, Robert	Huett, F. A.
Lyon, J. B.	Moshier, B.	Oscar, ——
Lora	Tuttle, M. A.	Van Liew, Lev.
Martin, S. K.	Hamilton, ——	
Mitchell, John	Jackson, Richard	Leick, John
Oregon	Minskey, J. P.	Winship, C. A.
Pahlow, L.	Ogden, Daniel	Hartman, John
Schuck, R. E.	Olson, Olof	Parks, John
Shenango No. 1	McLeod, R.	McGuire, Wm.
Shenango No. 2	Dorrity, F. A.	Elliott, Wm.
Senator	McQueen, E. B.	
United Lumbermen (Br.)	Morden, G. H.	McLeod, D.
Waverly	Henrich, Frank	Turner, ——
Wright, A. P.	Gunderson, C. F.	Berney, J.
Yattau, J. F.	Dwelle, A.	
SCHOONER.	MASTER.	
Aldrich, Wm.	Johnson, Henry	
Alverson, H. D.	Landgraf, Wm.	
City of Grand Rapids	Anderson, C.	
Clint, D. K.	Peltier, Albert	
Crosthwaite, W. S.	Olsen, Charles	
Delaware	Pringle, Thos.	
Duvall, J.	Pfeil, Max	
Elizabeth	Enman, Charles	
Foster, S. H.	Jones, J. S.	
Guido	Larsen, Hans	
Gordon, Cynthia	Rieboldt, H.	
Hinchman, Kate	Campbell, John	
Kitchen, J. B.	McCaffrey, B.	
Knight Templar	Hamilton, H.	
Lathrop. S. H.	Cotey, J.	
Light Guard	Hansen, James	
Reddington, N.	Parker, Wm.	
Russian	Hamilton, James	
Sheldon, T. P.	Janssen, R.	
Shepard, L. B.	Clark, J. P.	
Verona	Tucker, Thomas	
Wing, Winnie	Peterson, Peter	
Wright, John W.	Armstrong, J. W.	
Barge 102	Gillis, John	
Barge 103	McArthur, Alex	

COMING FROM THE COAST.

It is now announced that the American Steel Barge Co. will bring back from the Atlantic Coast the steamer Joseph L. Colby and barge 110, which were built at West Superior and taken down several years ago, and also the barges 201 and 202, built on the whaleback model by the Handrin & Robbins Co., of New York. The Colby and consort will be cut in two in order to get them through the St. Lawrence canals, but the 201 and 202 are only 190 feet in length and need no alteration. The barges will be put together on Lake Ontario and will be in the lake trade by June.

The owners of the whaleback steamer Christopher Columbus want to sell her early this season to save, if possible, the expense of fitting her out in the Chicago-Milwaukee trade. It is considered that she would be a much better investment an the coast than on the Great Lakes, where her opportunities are limited.

The committee appointed by the Lake Carriers' finance committee to fix ore trimming charges have made the rates 2½c per ton at Duluth, Superior and Ashland, wnere the ore is chiefly of the soft varieties. At Marhuette and Escanaba 3c is to be paid. At the latter port the men demand 3½c, and so far boats have come away without trimming.

Mr. Walter Miller, formerly chief engineer for the Globe Iron Works Co., has opened an office in Room 310 Western Reserve Building, Cleveland, where he will act as consulting engineer, giving special attention to marine work, and to plants for electric power stations. He also announces that he will be prepared to give estimates, in the interest of the Bethlehem Iron Co., on steel forgings of all descriptions.

SHIP BUILDING AND REPAIRS.

THE COMPLETED SHIPS.

The statement comes from Fairport that the new steamer W. D. Rees, just delivered by the Cleveland Ship Building Co. to the Wilson Transit Co., has loaded as her maiden cargo 3,712 tons of cargo and 200 tons of fuel on a mean draft of 13½ feet. This was considerably more than was anticipated. She will load wheat at the head of the lakes, and will probably break the steamer cargo record.

The steamer L. C. Waldo has left F. W. Wheeler & Co.'s shipyard at West Bay City, and has gone to Lake Superior light for her first cargo—$1 ore.

A week from Monday will undoubtedly see the fine new sidewheel steamer City of Buffalo in commission. The management of the Cleveland & Buffalo Transit Co. have arranged a very attractive series of complimentary rides and receptions at Detroit, Cleveland and Buffalo.

The first steamship of the Rockefeller fleet the Sir Henry Bessemer, is rapidly nearing completion, and the Globe Iron Works Co. hope to launch her during the first week of May. A good part of the large force of men at work in the yard are making up for lost time on the revenue steamer John G. Carlisle. The second steamer for the Bessemer Steamship Co. is well advanced, and the Mutual Liner Coralia is almost ready to go into commission.

At the Cleveland Ship Building Co.'s yard the steamer Queen City is making excellent progress. The tug Edna G. is about ready to receive her Babcock & Wilcox boiler, which arrived Wednesday. A good deal of preparatary work is being done on the Bessemer Co.'s steamship, but she will make little show in the yard until after the launch of the Wolvin boat.

The Cleveland Ship Building Co. is loading upon the steamer Belle P. Cross four 12x12 foot boilers for the new Rockefeller steamship building at the American Steel Barge Co.'s yard at West Superior. The boilers for the steamship F. Rockefeller, built by the American Steel Barge Co. on their own account, were sent up by rail during the winter, and have already been installed. The Cleveland Ship Building Co. shipped to South Chicago last week, on board the steamer C. B. Lockwood, the two boilers for the steel steamer George N. Orr, launched last Saturday at the Chicago Ship Building Co.'s yard.

It had been expected to launch a large four-masted schooner at Capt. James Davidson's yard, West Bay City, some time this week and another in about ten days. Fire, however, destroyed the planing mill at the yard, involving a loss of $15,000 to $20,000, and in addition burned one of the schooners badly about the bow. Captain Davidson carried $10,000 insurance on the mill, machinery and stock, placed in the following companies: Royal, of Liverpool, $1,000; New York Underwriters, $1,500; National, of Hartford, $500; Lion, of London, $500; Philadelphia, $1,000; Niagara, $500; Ætna, of Hartford, $2,500; Greenwich, of New York, $750; American Fire, of Philadelphia, $720; Commercial, of London, $1,500. There was no insurance on the boat on which the loss is about $1,000.

The new tug building at E. W. Heath's shipyard, Benton Harbor, for the Graham & Morton Transportation Co., Chicago, was launched Wednesday. She was named Andy.

The American Steel Barge Co. expect to launch the steamer Frank Rockefeller next Saturday, and barge 137 ten days later.

A new tug for Mitchell & Co., Ludington, was launched there last week.

LAUNCH OF THE GEORGE N. ORR.

OFFICE OF THE MARINE RECORD,
CHICAGO, April 20.

The splendid steel steamer George N. Orr was successfully launched Saturday afternoon at 3:10 o'clock, at the Chicago Ship Building Co.'s yard, under the skillful direction of Manager Babcock. The ceremony of christening was gracefully performed by Miss Annie Elphicke, daughter of the well known Capt. C. W. Elphicke, the managing owner of the new steamer. The Orr is owned by C. W. Elphicke and others, and is named after the son of Arthur Orr, of Buffalo, one of the largest shareholders in the new boat. Her dimensions are 326 feet keel, 340 feet over all, 42 feet beam, 26 feet molded depth. Her engines are triple-expansion, 20, 33 and 54 inches by 42 inches stroke, and her two boilers are 12 feet by 12 feet each. The new steamer will be ready for sea in about thirty days. She will be commanded by Capt. C. Z. Montague, formerly of the steamer Arthur Orr. The launch was witnessed by several thousand people. WILLIAMS.

THE LAKE MICHIGAN CAR FERRIES.

The hulls of the two car ferry barges building at Craig's shipyard, Toledo, for the W. & M. Railroad are well forward and are nearly ready for launching. Both barges, and the steel tug Fischer, building at this yard for the same company, will go into the water in May.

The barges are 316 feet long by 46 feet beam and 12 feet molded depth, the depth from rail to bottom being 20 feet. They are built of the best white oak timbers, edge-bolted together, the bolts 6 inches apart, except for a distance of 45 feet back from the stem, where the rib construction is used. Three longitudinal bulkheads of 8x12-inch white pine timbers, edge-bolted, divide the hull into 4 water-tight compartments. The bilge keelson contains bolts which run down through the other keelsons, and on the sides, inside the timbers, are frames 4 feet apart. The construction is in all respects the stiffest attainable, and the barges are calculated not only to outlive the roughest weather, but to ride at comparative ease in the heavy seas. Each barge will accommodate 28 cars, and ample quarters are provided for officers and crew. It is expected to use one of these with each of the others now in service, so that steam-steering gear will be installed on only one of the new barges. The tug is supposed to steer the forward barge, with the assistance of the steam steerer to be carried on the after barge. The construction is under the supervision, on behalf of the owners, of Capt. M. J. McHale, of Chicago.

The tug Fischer is also well advanced, all the hull and much of the interior plating being completed. The ways are up for loading the two boilers. Her engine will be triple-expansion, 18, 30, and 50 by 36 inches. The bedplate for the engine is now being laid. The tug is building alongside the dry-dock, into which she will be launched when ready. The Fischer is the largest and will be by far the most powerful tug on the lakes. She has an 11½ foot wheel, with 16 feet pitch.

The tug Fischer is being built under the inspection of Mr. Robert Logan, who will give her the highest class in the Record of American and Foreign Shipping.

The Lake Michigan Car Ferry Transportation Co. (W. & M.) has chartered the tug Violet H. Raber to assist the tugs J. C. Aimes (lately the tug J. C. Perrett and S. M. Fischer in making up their tows at Peshtigo and "tailing" them through the Green Bay portion of the route. The company's tug E. G. Crosby will be stationed at South Chicago and part of the time will engage in towing the small car ferry barge now building at Peshtigo for the company between Chicago and South Chicago. The Raber will be stationed at the ship canal and when not otherwise employed will tow vessels through the bay. The Raber, which was formerly the tug Ivy M. Leathem, has a high pressure engine 22x24, built by Wilson & Hendry, of Montague, Mich. She is allowed 140 pounds of steam; her boiler was built at Manitowoc in 1893 and was placed in her in the spring of 1894. She is equipped with a steam shifting gear.

THE WRECKING TUG MONARCH.

During the winter the Escanaba Towing and Wrecking Company's big wrecking tug Monarch has been so transformed in appearance that she looks like a new boat. The engine-room has been enlarged, the engine and boilers overhauled a steam hoist has been added, and an upper deck and cabin have been built. The upper cabin is conveniently arranged and comfortably fitted up. Forward, overlooking the main deck, is the pilot house, behind which, and connecting with, is the captain's room, provided with two double berths and furniture. Leading from the captain's room is a large room in the middle of the boat for the use and comfort of insurance adjusters. This room has four double berths, writing desk, chairs, etc., is carpeted and otherwise made attractive. A combined toilet room and closet is situated between this room and the captain's room, with access from either. Aft of the insurance adjusters' room are rooms for the engineer and diver, each fitted with two single bunks. The gallery and dining room and sleeping accommodations for the remainder of the crew are in the hold, amidship and aft. The boat is heated by steam throughout. The work was done under the supervision of Capt. Nyhaugen, of Manitowoc, an experienced man in the business.

The chief officers of the Monarch are: Captain, George Bartley, Sr.; mate, Okey Vorrus; first engineer, George Bartley, Jr.; second engineer, John Johnson.

The first important work the Monarch will undertake this season will be the releasing from Big Summer island of the steamer Jim Sheriffs, which stranded there last fall.

The company's other tugs, Delta and Owen, have also been overhauled and placed in good shape for business. Capt. Casper Bartley is in command of the Delta, with Boardman Leighton as engineer. Frank Bartley is in command for the first time of the Owen, and L. Norton is the engineer.

GENERAL REPAIR WORK.

CLEVELAND.—At the Cleveland dry-dock the Pease got out Tuesday, and the schooner P. S. Marsh and little steam-yacht Alert were docked. The Alert is receiving an overhauling, and the Marsh a thorough recalking. The steamer Waverly and schooner F. C. Leighton are outside the dock, getting repairs incidental to the opening of the season.

At the Ship Owners' dry.dock the steamer Colonial is in for a new rudder. The Alva B. has also received a new rudder. The schooners Bacon and George were in last week and had their center-board boxes takeh out.

The steamers Choctaw and Andaste have left the Globe shipyard after having received considerable work inside, enough hold box beams being put in to compensate for the absence of a main deck. The sides are double plated on the "tumble home" portion. The valuation is made $130,000 in Inland Lloyds Register.

BUFFALO.—The steamer Thomas Maytham was injured $1,000 by the Thomas Davidson striking her when coming up the creek Sunday night. She is now in dock for survey and repairs. The Tioga, which tried to buck the ice and had to come back discharged about 400 tons of freight, letting her bows up so repairs could be made several plates were badly bent, but only one frame was broken. The Conestoga, Jewett, Neshoto, and Tuscarora have been in dock this week.

We have received from Pawling & Harnischfeger, Milwaukee, a catalogue showing the workings of Beck's patent steam steering gear, adapted for all classes of tonnage. This gear can be instantly changed from steam to hand, or vice versa, without removing the hands from the wheel. This gear is especially arranged for installation in the pilot house and seems to take up a very small amount of space.

REPAIR NOTES.

THE Bradley steamer City of Cleveland is receiving considerable repairs at the South Chicago dry-dock.

The steamer J. H. Wade struck a log near Skilligalee light a few days ago, when bound up, which made a fracture an inch wide and several feet long in one of her plates. She patched it, and will repair at Milwaukee.

The Roberts Safety Water Tube Boiler Co., 39 and 41 Cortlandt street, New York City, frequently has applications from vessel owners for marine engineers. We advise engineers who have had experience with Roberts boilers to send the Roberts Company their names, addresses and references, together with a statement of what vessels they have had charge of, and the tonnage of their certificate. All this information will be entered in a book kept for the purpose and a full page devoted to each applicant so that changes of address can be noted, etc.

The Marine Iron Works, Clybourn and Southport avenues, Chicago, have issued a very handsome catalogue showing their works and some of their most approved machinery and steamyachts. On the fly leaf is the following: "Our specialty is the building (to order) of high-grade marine machinery, and complete steam craft in small and medium sizes. Having the best of modern shop equipment, and an experienced working force, we respectfully invite the attention of all interested to our product, and the critical examination of those most highly trained to pass judgment—the American engineers."

AIDS TO NAVIGATION.

RULES FOR THE SAULT CANAL.

Following are the rules given out by the Treasury Department for the navigation of the St. Mary's River. They were unavoidably left over from last week:

LIMIT OF SPEED —No vessel ascending or descending the St. Mary's River shall proceed at a greater speed than seven miles an hour between the following named points, to-wit: Between the turning channel buoy in the northern part of Mud Lake and the northern float lights of the 20-foot channel of Hay Lake, leading from Neebish channel, and between the crib light at the southern entrance of the upper 20-foot and Little Rapid channels and the government pier at Sault Ste. Marie, and between the western end of the Sault Ste. Marie canal piers and Big Point.

BOUND UP.—No steamer without a tow shall pass or approach another steamer without a tow movlng in the same direction nearer than one-half of a mile between the points named in Rule 1. But a steamer without a tow may pass a steamer with a tow between the following points, to-wit: Turning channel buoy in northern part of Mud Lake and Everens Point, and between the northern end of the Dark Hole and black buoy No. 13 in Little Mud Lake.

BOUND DOWN.—No vessel shall pass or approach another vessel moving in the same direction nearer than one-half of a mile between the points named in Rule 1.

PASSING.—All vesels navigating the St. Mary's River may pass other vessels moving in the same direction between Detour Lighthouse Point and the turning channel buoy in the northern part of Mud Lake, and between the northern float lights of the 20-foot channel leading from the Neebish channel into Hay Lake, and the crib light at the southern entrance of the 20-foot and Little Rapid Channels.

Special attention is called to Rule 24 of the act of Congress approved February 8, 1895, giving the right of way to the descending vessels in the St. Mary's River.

In case one steamer desires to pass another going in the same direction on the said river at a point where such passing is permitted by these rules the pilot of the steamer astern shall, if he intends to pass the steamer ahead on the right hand or starboard side, indicate such intention by giving one short blast of the steam whistle, and if he intend to pass such steamer ahead on the left hand or port side, he shall indicate such intention by giving two short blasts of the steam whistle. Upon the pilot of one steamer astern of another giving such signal the pilot ahead shall immediately answer by giving the same signal; but if he does not think it safe for the steamer astern to attempt to pass at that point, he shall immediately signify the same by giving several short and rapid blasts of the steam whistle; and under no circumstances shall the steamer astern attempt to pass the steamer ahead until such time as they have reached a point where it can be safely done, when said steamer ahead shall signify her willingness by blowing the proper signals; then the steamer ahead shall slacken to a slow rate of speed, and the steamer astern shall also slacken her speed and pass slowly the overtaken steamer at no nearer distance than 500 feet, nor attempt to cross the bow or crowd upon the course of the overtaken vessel. The boat ahead shall in no case attempt to cross the bow or crowd upon the course of the passing steamer.

Steamers bound in opposite directions shall slow to half speed within one-half of a mile of each other until each has passed the other.

The patrolling vessels of the revenue cutter service shall always have the right of way over all other vessels as indicated by the sailing signals given by such patrolling vessel.

Three distinct blasts of the steam whistle, when sounded from a patrolling vessel, will indicate that the vessel to which such signal is given is proceeding at too high a rate of speed, and such vessel must immediately moderate her speed accordingly.

Three long blasts of the steam whistle followed by one short blast, when sounded from a patrolling vessel, will indicate that the vessel to which such signal is given must stop until further orders from the patrolling vessel.

Two red lanterns, one over the other, hoisted on a patrolling vessel at night will indicate to the vessel to which such signal is given that such vessel must stop and not proceed further toward the position where such lights are displayed.

No vessel or raft shall anchor in said river between Everens point and the float lights at the north end of 20-foot channel leading from the Neebish channel to Hay Lake, nor between the crib light at the entrance of the upper 20-foot cut and Little Rapids channel and the crib light at the northern entrance of the Hay Lake channels, except in distress or during a fog, and any vessel so anchored must always shift her anchorage when directed by the officer in charge of a patrolling vessel to the spot designated by such officer.

Vessels navigating the St. Mary's River may anchor between Point Detour and Mud Lake turning buoy and at Sailors' Encampment close to the wharves of the sawmill. In Hay Lake between the Neebish and Little Rapids Channel outside of the channel as indicated by the ranges, but nothing in this rule shall be construed to prohibit any vessel from lying alongside of any wharf in said river.

Rafts being towed in the St. Mary's river will be requsred to use what is termed the "old channel." From Harwood point to Mud Lake turning buoy they will move at the time designated by the officer in charge of the patrolling vessel. When lying by they must be moored out of the channel.

In navigating the St. Mary's River, in all cases where the foregoing rules are not applicable, the attention of masters and pilots is called to the sailing rules contained in the act of Congress of February 8, 1895.

All vessels navigating the St. Mary's river, in passing dredges and vessels at work on improvements to the channel, will be required to slacken their speed upon such dredge or other vessel engaged in such improvement giving the signal of three distinct blasts of the steam whistle.

The pilot of every steamer descending the St. Mary's River shall, when abreast of the black buoy at Rains shoal and before passing around the bend of said river at Sailors' Encampment, give a signal of one blast of the steam whistle of ten seconds' duration, which signal be answered by a blast of the steam whistle of the same duration by any vessel ascending said river within hearing. The pilot of every steamer ascending said river, not having heard such signal from a descending steamer, shall, when abreast of Everens Point and before passing around the bend of said river at Sailors' Encampment, give a signal of one blast of the steam whistle of ten seconds' duration, which shall be answered by a blast of the steam whistle of the same duration by any vessel descending said river within hearing. After such signal of one blast of the steam whistle of ten seconds' shall have been given and answered, the usual passing signals must be given.

Capt. A. B. Davis, R. S. C., commanding United States Steamer Johnson, will, until otherwise ordered, have supervision of the enforcement of the foregoing rules and regulations, and all complaints or appeals arising under them will be made by parties concerned to that officer.

C. S. HAMLIN,
Acting Secretary.

NOTICE TO MARINERS.

HYDROGRAPHIC OFFICE MONTHLY.

The issue for April of the Hydrographic Office Notice to Mariners is chiefly devoted to a record of notices heretofore given in these columns. It further states that a dangerous shoal, with but three feet of water over it, has been reported on the east side of the South entrance to Detour passage, St. Mary's River. This shoal consists of large boulders and is reported as being about 3,500 feet S. W. ½ W (S 50° 37′ W) from Barbed Point (Crab Island). Mariners are cautioned to give this spot a wide berth, as the position given is only approximate. It is also reported that the shoal shown on the charts as 2,600 feet South from Barbed Point lies about 3,200 feet S. E. ¼ S. (S. 42° 11′ E) from Barbed Point.

Instructions are given to cancel and destroy the chart of Byng Inlet, Ont., published with the March issue, as it was compiled from erroneous information.

The mast from which the rear range light is shown at Cape Charles, St. Lawrence River, is now 40 feet high, and the light is elevated 120 feet above the surface of the river.

AIDS TO DETROIT RIVER NAVIGATION.

Capts. W. S. Mack and George P. McKay, representing the Lake Carriers' Association, have made arrangements with Candler Bros. to drive three clusters of piles to mark the new Grosse Point channel. They will also drive three clusters marking the dredged channel from abreast Ballard's Reef light to abreast McDougall can buoy above Texas dock. The usual fixed ranges will be kept by Duff & Gatfield, who will have a water guage at the lower end of Amherstburg for the purpose of telling up-bound vessels the depth of water on Ballard's Reef and also one at Sandwich to notify down-bound boats of the same. The signal code will be printed and furnished to masters. The government will move the lightship to the outer end of Lake St. Clair channel and the tripod will be discontinued. Float lights will be maintained on Briton, Boston, New York and Fitzgerald shoals and at the upper end of Malden's docks, known as the Red Can, opposite Milwaukee Shoal. The Lake Carriers' outlay for lights thif season will reach $5,600.

IMPROVED LIGHT SERVICE AT THE SAULT.

Capt. Leo Bernard, who conducted ranges and lightships on the St. Mary's River last season, is now very busy making extensive improvements to his range lights in Waiskai Bay. He is placing larger lamps to show a distance of at least eight miles. His lightship for Vidal Shoal, above the canal, will receive new tripods and a larger light. He is also building a new lightship to be placed at the foot of Sugar Island at the lower black stake (a red light) at the turning point. This no doubt will meet with the hearty approval of the vessel captains, as they have many times desired the stake lighted.

REPORTS AT PORT HURON.

Lynn, the marine reporter at Port Huron, has been awarded the contract for furnishing the Lake Marine News Association with marine news from that port. Mr. Lynn requests masters to give his river reporters any news of interest and it will be published in all the lake papers. Two long, two short and one long whistles calls by river reporters. Mr. Lynn has ordered a large megaphone from Capt. George Simpson, of Cleveland, and will use it in calling to passing vessels. It is the first to be used on the lakes.

NOTES FOR NAVIGATORS.

The Lake Carriers' Association has been advised by the Canadian Minister of Marine that two gas buoys have been ordered for Lake Erie. These will probably be charged at Cleveland.

Notice is given by the United States Engineer that the new ship channel from the head of Detroit River into Lake St. Clair cannot be thrown open for its full width of 800 feet owing to unexpected delay on the part of the dredgers, but that a channel 15,000 feet long and 400 feet wide at the upper end, in Eake St. Clair, winening to 800 feet at the head of Detroit river, has been properly buoyed for all classes of vessels.

"CAN'T KEEP HOUSE WITHOUT IT."

DETROIT, April 5th, 1896.

Mr. H. C. Beeson, Chicago:

DEAR SIR—Replying to yours of January 24, would say of course I want one of your directories. How do you expect me to keep house without it? Yours,

Respectfully

CAPT. A. H. SHAFER,

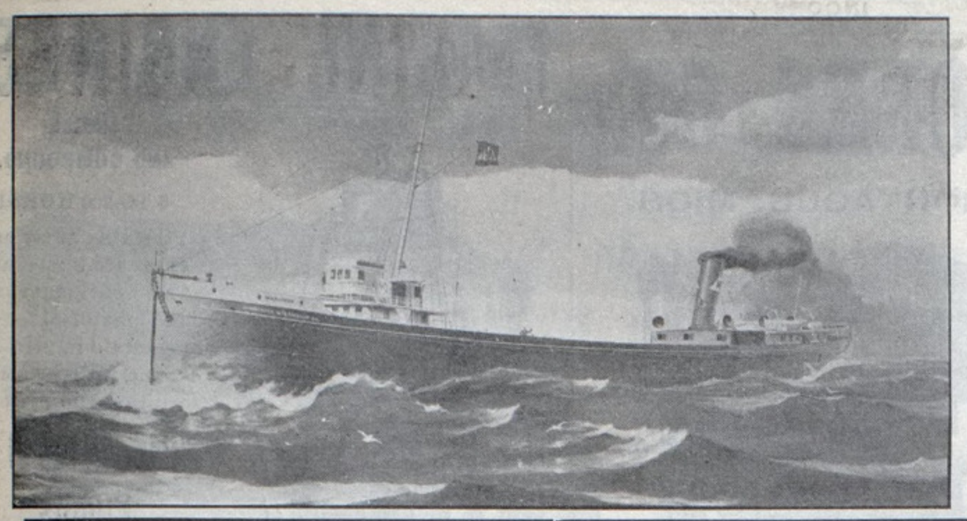
TOLEDO HARBOR TUG LINE.

The Toledo Harbor Tug Line has been reorganized with L. S. Sullivan, manager and treasurer. The line consists of ten tugs, officered as follows:

TUG.	MASTER.	ENGINEER.
S. C. Schenck	Jos. McKinley	Wm. England
L. Bir. khead	Nathan Sullivan	F. Sullivan
A. Andrum, Jr.	Chas. Vosburg	Thos. Hunt
Fanny L. Buher	Chas. Sheehan	Jib Burt
Frank S. Butler	Henry Hughes	Alf Page
T. M. Moore	Frank Nannen	Geo. McNally
Jos. S. Spinny	John Dumuth	Frank Sayen
Wm. E. Rung	E. A. Williams	Henry Moran

Also the tugs Roy and Uncle Sam, no appointments for these having been made yet.

H. G. TROUT, ESQ.: The propeller wheel furnished by you for our steamer Roumania is all right in every respect. She tows her consort one mile per hour faster with your wheel than any of the other wheels we ever had on her, and when any of our other steamers need a wheel, we shall certainly give you the order.—W. C. RICHARDSON, Manager Richardson Transportation Co.

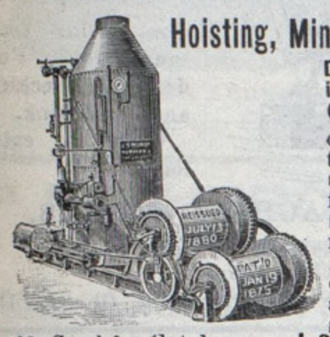


GRAHAM'S

Rapid Fueling Docks, Detroit River, foot 21st Street.

No interference from Passenger or Car Ferry Lines.
Full supply of BEST STEAM COAL always on hand.
Wide stretch of river and plenty of water at dock. POCKETS and CHUTES arranged for various types of vessels, allowing QUICK DISPATCH day or night.

JAMES GRAHAM, DETROIT.



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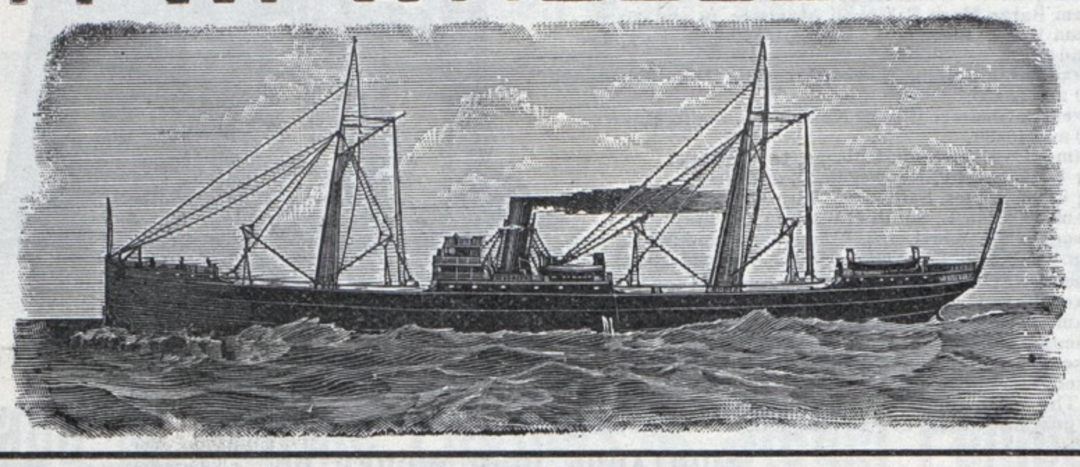

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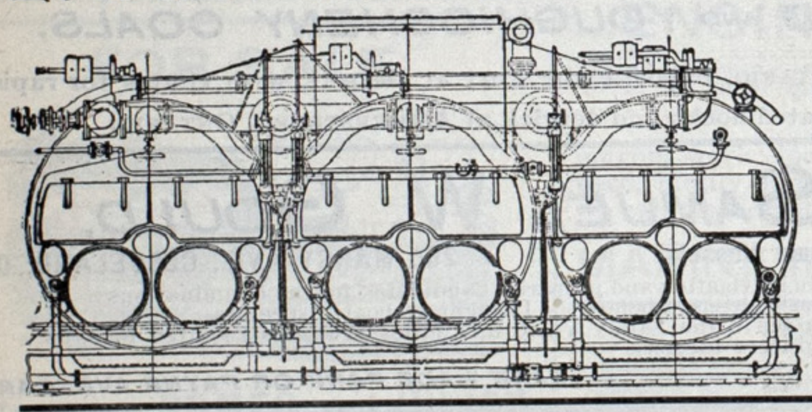

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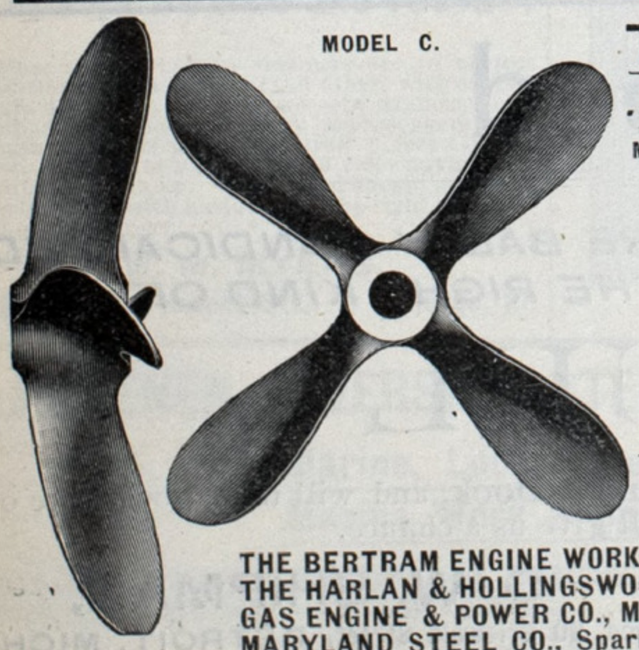

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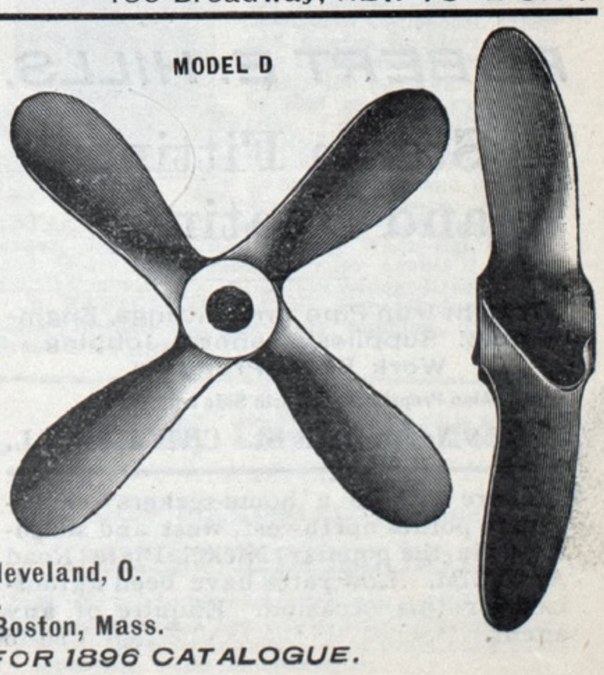

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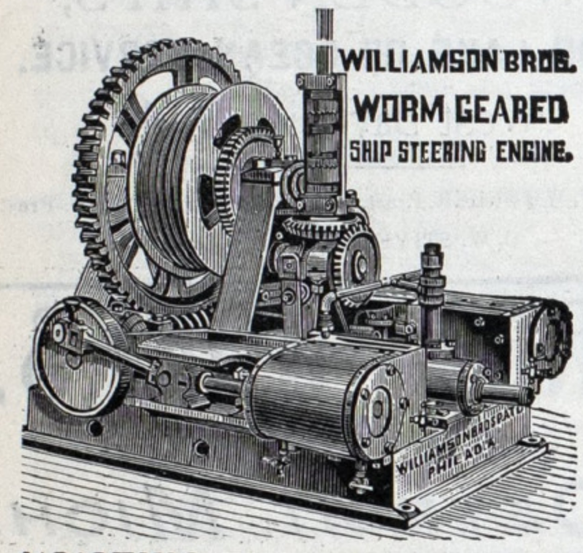

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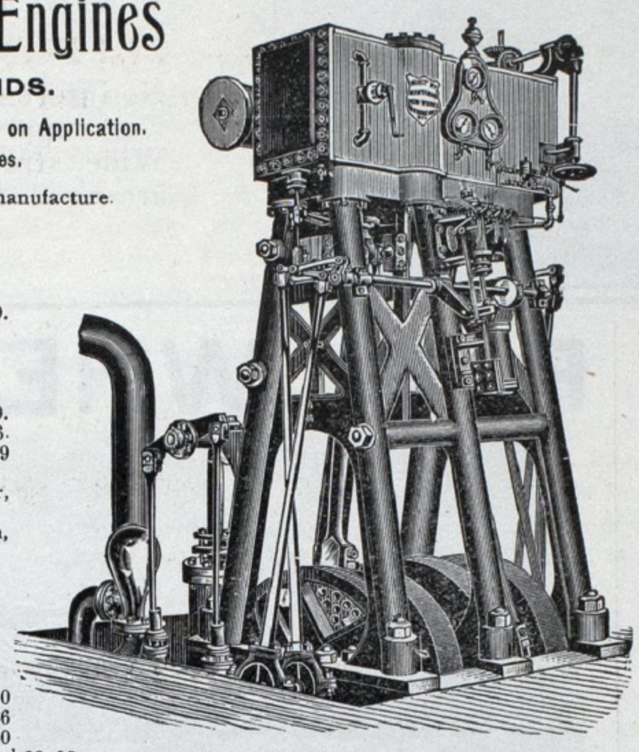

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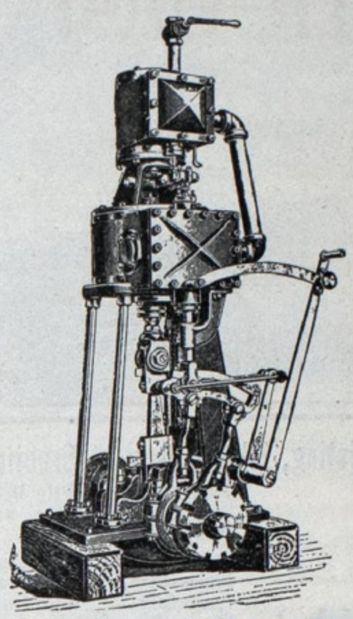

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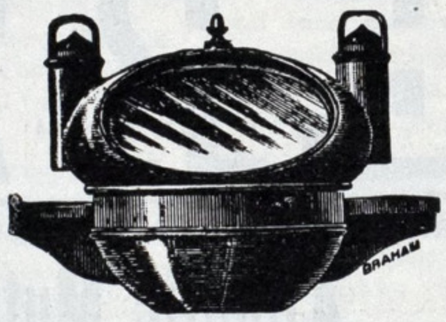

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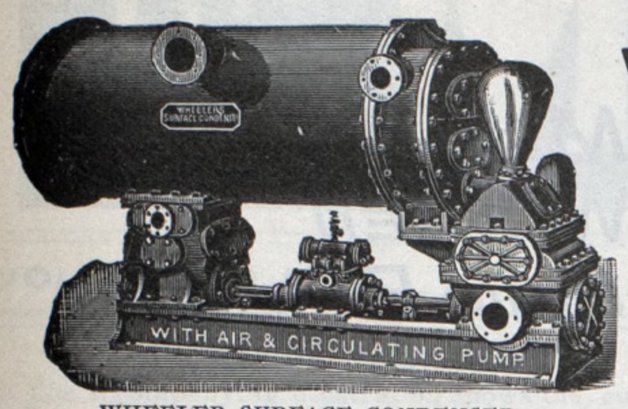

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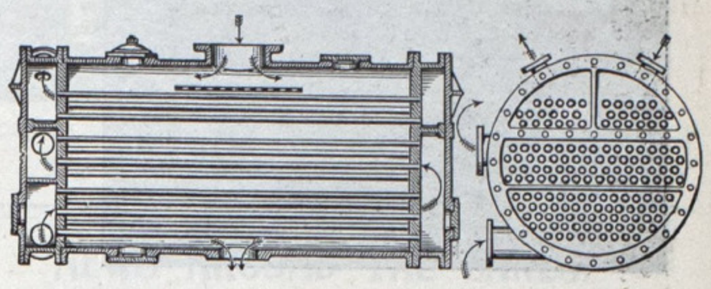

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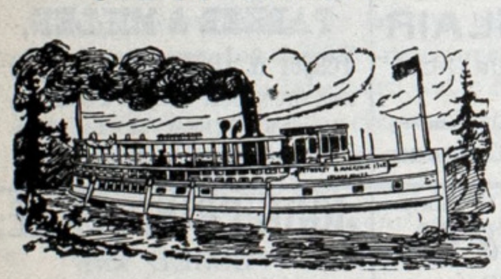

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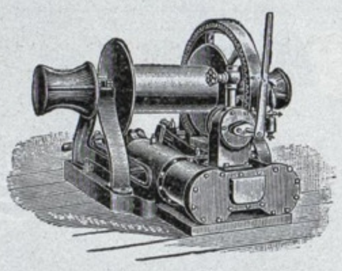

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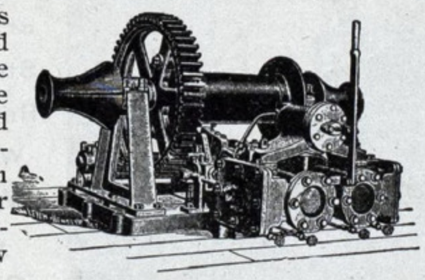

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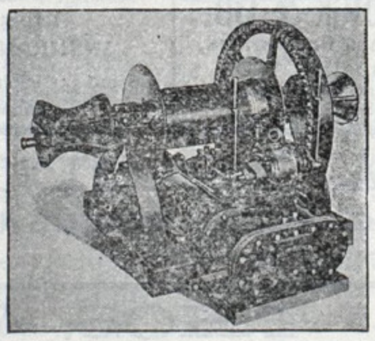

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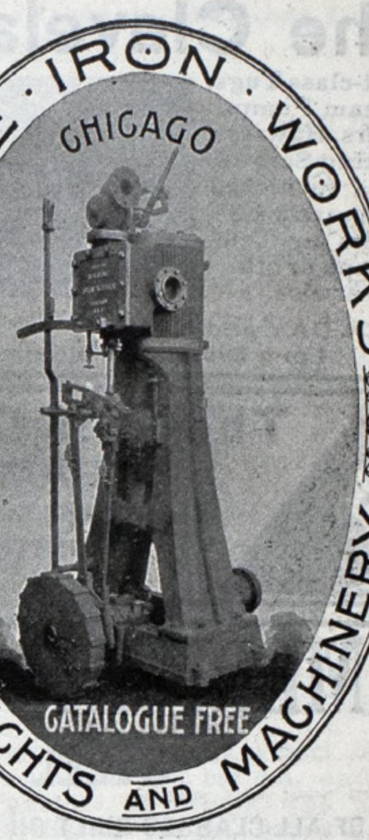

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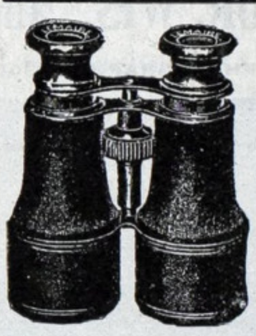

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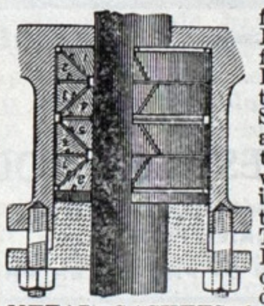

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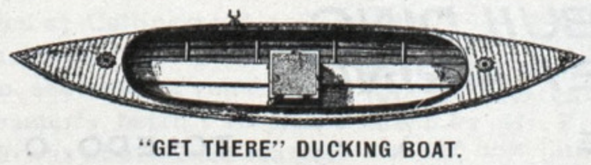

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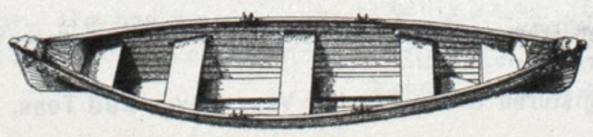

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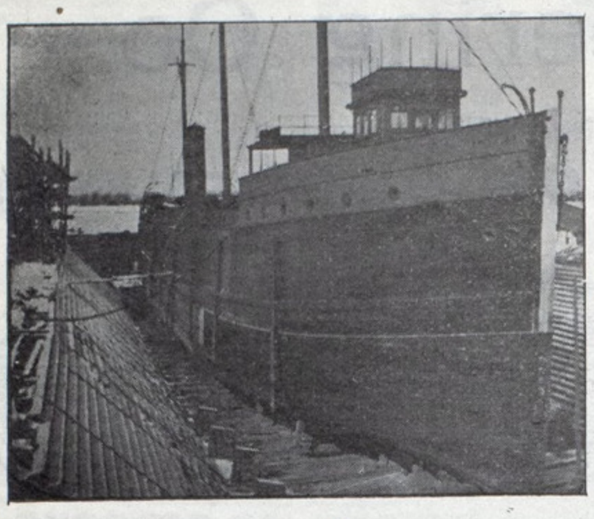

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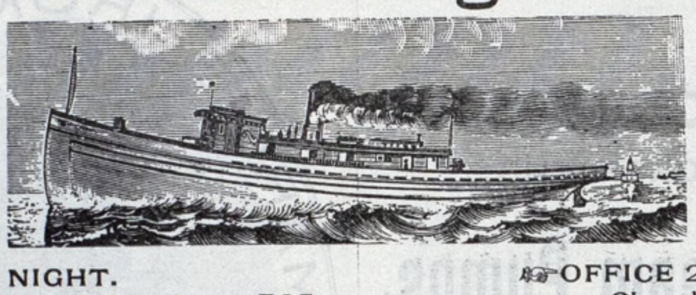

Steamers when outside wanting our Tugs, blow one long whistle and as many short ones as they want tugs.

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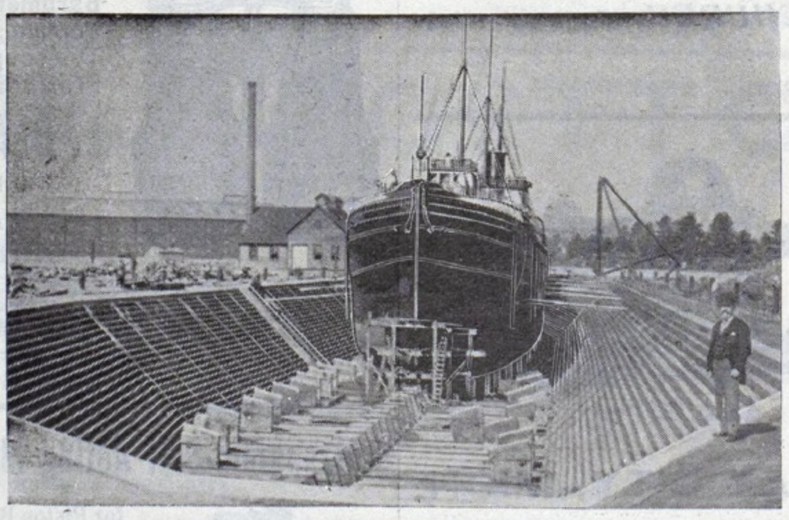

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Breadth, Top	90 " 4 in.	Entrance, Bottom	50 "
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PRICES FOR REPAIRS AND DOCKING SAME AS AT LOWER LAKE PORTS.

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Dimensions of Dock, 236 feet long, 55 feet wide at top and 37 feet wide at gate. Nine feet water over sill.

RATES OF DOCKING, Ten Cents per Registered Gross Ton for Vessel over 200 Tons.

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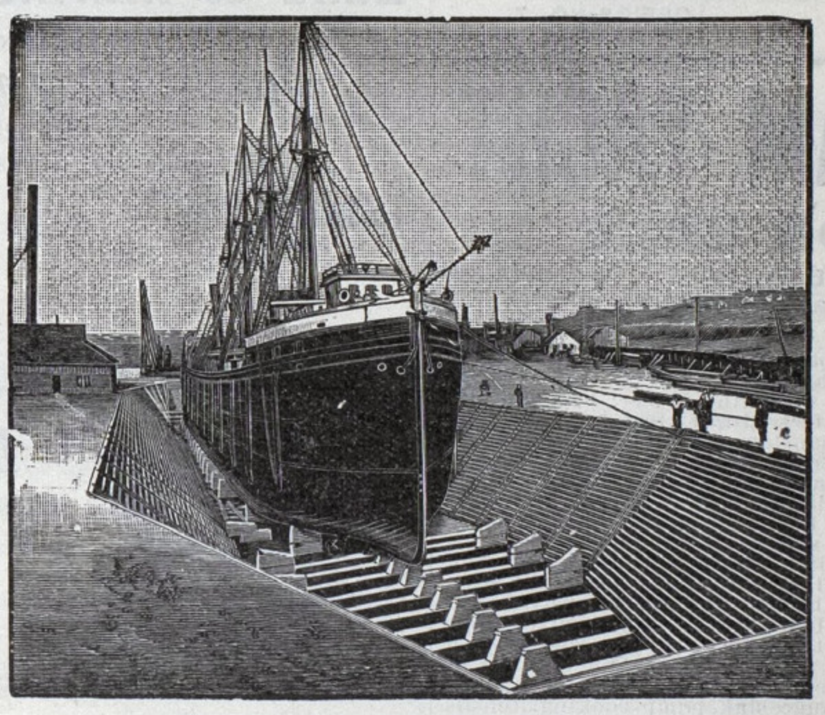

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